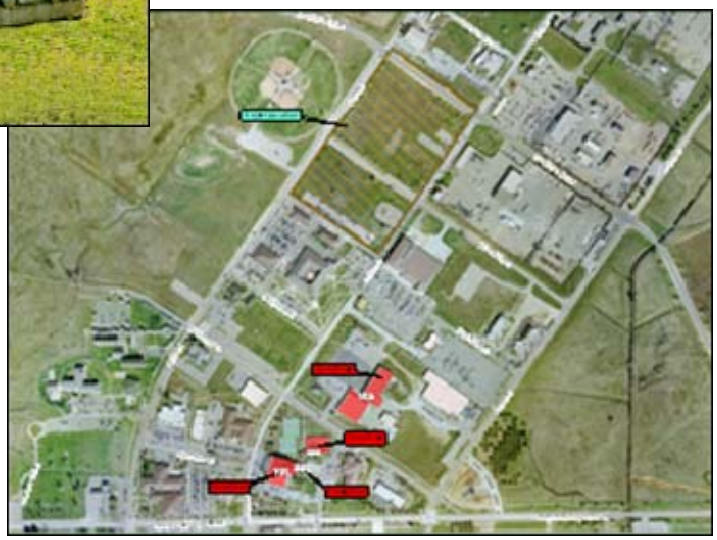
FINAL

ENVIRONMENTAL ASSESSMENT
ADDRESSING CONSTRUCTION OF A FITNESS CENTER
AT
BEALE AIR FORCE BASE, CALIFORNIA



OCTOBER 2009

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14. ABSTRACT

Beale AFB?s ability to support fitness programs for military personnel, dependents, and eligible users is currently diminished. Based on a USAF Fitness Center Facility Assessment, the existing Harris Fitness Center and Health and Wellness Center (HAWC) have been deemed inadequate in size and are considered to be in substandard condition. In addition, these existing facilities lack many of the functions needed to provide the varied physical fitness and recreational program essentials to support military readiness and improve the physical fitness of active-duty and reserve personnel. Without a new Fitness Center, Beale AFB would continue to experience difficulty meeting the USAF physical fitness requirements. Under the Proposed Action, Beale AFB proposes to construct a 60,794-square-foot (ft2) Fitness Center construct associated parking lots (80,729 ft2), install utilities for the Fitness Center, demolish six existing parking lots and concrete sidewalk area on the proposed project site, remove a portion of 26th Street that goes through the middle of the site in order to meet anti-terrorism/force protection (AT/FP) requirements demolish the HAWC (Building 2459, 48,513 ft2), demolish the existing Fitness Center (Building 2418 25,975 ft2), demolish the utility/storage facility adjacent to the existing Fitness Center (Building 2424 1,036 ft2), and demolish the pool house and pool (Building 2422, 1,857 ft2). The drainages that go through the proposed project site would also be realigned and the new site drainages would be designed so ?no net loss? in drainages would occur. Under Alternative 1, Beale AFB would conduct all of the actions described under the Proposed Action and in addition widen Doolittle Drive by adding turn lanes into the proposed Fitness Center. All construction project sizes stated above are approximate, since the Fitness Center has not been formally designed. The EA evaluates the potential environmental consequences of the Proposed Action and alternatives including the No Action Alternative, on the following nine general impact topics: air quality, geological resources, water resources, biological resources, cultural resources, traffic, safety, utilities and infrastructure, and hazardous materials and wastes.

15. SUBJECT TERMS

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)

1.0 NAME OF THE PROPOSED ACTION

Construction of a Fitness Center at Beale Air Force Base (AFB), California.

2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to construct a new Fitness Center to support combat readiness, improve the physical fitness of active-duty and reserve personnel, and to bring the Fitness Center facilities and programs into compliance with Air Force Handbook (AFH) 32-1084, *Facility Requirements, Air Force Services Facilities Design Guide, Design: Fitness Centers*, and Air Force Instruction (AFI) 10-248, *Fitness Program*.

The Proposed Action is needed because the ability of Beale AFB to support fitness programs for military personnel, dependants, and eligible users is currently diminished. Based on a U.S. Air Force (USAF) Fitness Center Facility Assessment, the existing Harris Fitness Center and Health and Wellness Center (HAWC) have been deemed inadequate in size and are considered to be in substandard condition. In addition, these existing facilities lack many of the functions needed to provide the varied physical fitness and recreational programs essential to support military readiness and improve the physical fitness of active duty and reserve personnel. Without a new Fitness Center, Beale AFB would continue to experience difficulty meeting USAF physical fitness requirements.

3.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Proposed Action. Under the Proposed Action, Beale AFB proposes to construct a 60,794-square-foot (ft^2) Fitness Center, construct associated parking lots (80,729 ft^2), install utilities for the Fitness Center, demolish six existing parking lots and a concrete sidewalk area on the proposed project site, remove a portion of 26th Street that goes through the middle of the site in order to meet anti-terrorism/force protection (AT/FP) requirements, demolish the existing HAWC (Building 2459, 48,513 ft^2), demolish the existing Fitness Center (Building 2418, 25,975 ft^2), demolish the utility/storage facility adjacent to the existing Fitness Center (Building 2424, 1,036 ft^2), and demolish the pool house and pool (Building 2422, 1,857 ft^2). The drainages that go through the project site would also be realigned and the new site drainages would be designed so "no net loss" in drainages would occur. All construction project square footage listing stated above are approximate, since the Fitness Center has not been formally designed.

Alternative 1. Under Alternative 1, Beale AFB would conduct all of the actions described under the Proposed Action and, in addition, widen Doolittle Drive by adding turn lanes into the proposed Fitness Center.

No Action Alternative. Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation. Under the No Action Alternative, Beale AFB's varied physical fitness and recreational programs would continue to be held in facilities that are inadequate in size and are considered to be in substandard condition. Without a new Fitness Center, Beale AFB would continue to experience difficulty meeting USAF physical fitness requirements.

4.0 SUMMARY OF ENVIRONMENTAL EFFECTS

The public and regulatory agency scoping process focused the analysis on the following environmental resources: air quality, geological resources, water resources, biological resources, cultural resources, transportation, safety, utilities and infrastructure, and hazardous materials and wastes. Details of the environmental consequences can be found in the Environmental Assessment (EA) which is hereby incorporated by reference. A summary of the analyses is presented in the Executive Summary of the EA.

5.0 CONCLUSION

Based on the description of the Proposed Action as set forth in the EA, all activities were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate Federal, state, and local agencies. The draft of this EA and FONSI were made available to the public for a 30-day review period. No public comments were received during this review period. Agencies were coordinated with throughout the EA process and their comments were incorporated into the analysis of potential environmental impacts performed as part of this EA.

6.0 FINDINGS

Based on the information and analysis presented in the EA conducted in accordance with the requirements of the National Environmental Policy Act, the Council on Environmental Quality Regulations, implementing regulations set forth in 32 Code of Federal Regulations 989 (*Environmental Impact Analysis Process*), as amended, and review of the public and agency comments submitted during the 30-day public comment period, I conclude that implementation of the Proposed Action would not result in significant impacts to the quality of the human or natural environment. For these reasons, a FONSI is approved and preparation of an Environmental Impact Statement is not warranted. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.

Robert A. Yahn Jr.

ROBERT A. YAHN, JR., Colonel, USAF
Vice Commander, 9th Reconnaissance Wing

20 OCT 09

Date

ABBREVIATIONS AND ACRONYMS

µg/L	micrograms per liter
µg/m^3	micrograms per cubic meter
ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Materials
AFB	Air Force Base
AFCEE	Air Force Center for Engineering and the Environment
AFI	Air Force Instruction
AFH	Air Force Handbook
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFPD	Air Force Policy Directive
AICUZ	Air Installation Compatible Use Zone
amsl	above mean sea level
AOC	Area of Concern
APE	Area of Potential Effect
AQCR	air quality control region
ARPA	Archaeological Resources Protection Act
ATC	Authority to Construct
AT/FP	anti-terrorism/force protection
BASH	Bird/Wildlife Aircraft Strike Hazard
BAT	best available technology
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAIS	Chemical Agent Identification Sets
CARB	California Air Resources Board
CDC	Child Development Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES/CEAO	Civil Engineering Squadron, Asset Optimization
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CO_2	carbon dioxide
CWA	Clean Water Act
CRWQCB	California Regional Water Quality Control Board
CZMA	Coastal Zone Management Act
DCE	dichloroethylene
e²M	engineering-environmental Management
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
EOD	Explosive Ordnance Disposal
EQD	Explosive Quantity Distance
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FRAQMD	Feather River Air Quality Management District
ft^2	square foot
GHG	greenhouse gas
HAP	hazardous air pollutant
HAWC	Health and Wellness Center
HCMP	Habitat Conservation and Management Plan
HQ	Headquarters
HSWA	Hazardous Solid Waste Amendments
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning

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INRMP	Integrated Natural Resources Management Plan
km	kilometer
LBP	Lead-Based Paint
LiDAR	Light Detection and Ranging
MBTA	Migratory Bird Treaty Act
mcf	million cubic feet
MCL	maximum contaminant level
MCLG	maximum contaminant level goal
MFH	Military Family Housing
mg/kg	milligrams per kilogram
mg/m^3	milligrams per cubic meter
MMRP	Military Munitions Response Program
MOU	memorandum of understanding
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NOA	Notice of Availability
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	ozone
OSHA	Occupational Safety and Health Association
OWS	oil/water separator
PACBELL	Pacific Bell
PAVE PAWS	Precision Acquisition Vehicle Entry Phased Array Warning System
Pb	lead
PCB	polychlorinated biphenyls
PCE	tetrachloroethylene
PG&E	Pacific Gas and Electric
$PM_{2.5}$	particulate matter equal to or less than 2.5 microns in diameter
PM_{10}	particulate matter equal to or less than 10 microns in diameter
POV	Privately-owned vehicle
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROG	reactive organic gases
RW	Reconnaissance Wing
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_x	sulfur oxides
SR	State Route
SVI	Sacramento Valley Intrastate
SWMU	Solid Waste Management Unit
TCE	trichloroethylene
TCP	Traditional Cultural Properties
TMDL	total maximum daily load
TPH	total petroleum hydrocarbons
TPH-D	total petroleum hydrocarbons - diesel
tpy	tons per year
TSCA	Toxic Substances Control Act
URBEMIS	Urban Emissions Model
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
U.S.C.	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
UXO	unexploded ordnance
VOCs	volatile organic compounds

COVER SHEET

FINAL ENVIRONMENTAL ASSESSMENT
ADDRESSING CONSTRUCTION OF A FITNESS CENTER AT BEALE AIR FORCE BASE, CALIFORNIA

Responsible Agencies: U.S. Air Force (USAF), 9th Reconnaissance Wing, Beale Air Force Base (AFB), and Air Combat Command (ACC).

Affected Location: Beale AFB, California.

Report Designation: Final Environmental Assessment (EA).

Abstract: Beale AFB's ability to support fitness programs for military personnel, dependents, and eligible users is currently diminished. Based on a USAF Fitness Center Facility Assessment, the existing Harris Fitness Center and Health and Wellness Center (HAWC) have been deemed inadequate in size and are considered to be in substandard condition. In addition, these existing facilities lack many of the functions needed to provide the varied physical fitness and recreational program essentials to support military readiness and improve the physical fitness of active-duty and reserve personnel. Without a new Fitness Center, Beale AFB would continue to experience difficulty meeting the USAF physical fitness requirements.

Under the Proposed Action, Beale AFB proposes to construct a 60,794-square-foot (ft^2) Fitness Center, construct associated parking lots (80,729 ft^2), install utilities for the Fitness Center, demolish six existing parking lots and concrete sidewalk area on the proposed project site, remove a portion of 26th Street that goes through the middle of the site in order to meet anti-terrorism/force protection (AT/FP) requirements, demolish the HAWC (Building 2459, 48,513 ft^2), demolish the existing Fitness Center (Building 2418, 25,975 ft^2), demolish the utility/storage facility adjacent to the existing Fitness Center (Building 2424, 1,036 ft^2), and demolish the pool house and pool (Building 2422, 1,857 ft^2). The drainages that go through the proposed project site would also be realigned and the new site drainages would be designed so "no net loss" in drainages would occur. Under Alternative 1, Beale AFB would conduct all of the actions described under the Proposed Action and in addition widen Doolittle Drive by adding turn lanes into the proposed Fitness Center. All construction project sizes stated above are approximate, since the Fitness Center has not been formally designed.

The EA evaluates the potential environmental consequences of the Proposed Action and alternatives, including the No Action Alternative, on the following nine general impact topics: air quality, geological resources, water resources, biological resources, cultural resources, traffic, safety, utilities and infrastructure, and hazardous materials and wastes.

Inquiries regarding this document should be sent to Ms. Rebecca Evans, 9th Civil Engineer Squadron, Asset Optimization (9 CES/CEAO), 6601 B Street, Beale AFB, California 95903-1708.

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ENVIRONMENTAL ASSESSMENT
ADDRESSING CONSTRUCTION OF A FITNESS CENTER
AT
BEALE AIR FORCE BASE, CALIFORNIA

9th Reconnaissance Wing
Beale Air Force Base, California
BAEY09-7133

OCTOBER 2009

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Introduction

This Environmental Assessment (EA) describes the 9th Reconnaissance Wing's proposal to construct a Fitness Center and demolish existing inadequate and substandard recreational facilities at Beale Air Force Base (AFB), California.

Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to construct a new Fitness Center to support combat readiness, improve the physical fitness of active-duty and reserve personnel, and to bring Fitness Center facilities and programs into compliance with Air Force Handbook (AFH) 32-1084, *Facility Requirements*, *Air Force Services Facilities Design Guide, Design: Fitness Centers*, and Air Force Instruction (AFI) 10-248, *Fitness Program*.

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Description of the Proposed Action and No Action Alternative

Proposed Action. Under the Proposed Action, Beale AFB proposes to construct a 60,794-square-foot (ft^2) Fitness Center, construct associated parking lots (80,729 ft^2), install utilities for the Fitness Center, demolish six existing parking lots and a concrete sidewalk area on the proposed project site, remove a portion of 26th Street that goes through the middle of the site in order to meet anti-terrorism/force protection (AT/FP) requirements, demolish the existing HAWC (Building 2459, 48,513 ft^2), demolish the existing Fitness Center (Building 2418, 25,975 ft^2), demolish the utility/storage facility adjacent to the existing Fitness Center (Building 2424, 1,036 ft^2), and demolish the pool house and pool (Building 2422, 1,857 ft^2). The drainages that go through the project site would also be realigned and the new site drainages would be designed so "no net loss" in drainages would occur. All construction project square footage listing stated above are approximate, since the Fitness Center has not been formally designed.

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Summary of Environmental Effects

Air Quality. Emissions from construction and demolition activities associated with the Proposed Action would have short-term, minor, adverse effects on local air quality and would have negligible effects on regional air quality. Implementation of the Proposed Action would not result in violations of any ambient air quality standards and would not exceed emission thresholds established by the Feather River Air Quality Management District (FRAQMD) when employing FRAQMD conservation measures with the exception of nitrogen oxides (NO_x) in 2011. Since Beale AFB is located in an unclassified/attainment area for criteria pollutants identified by the U.S. Environmental Protection Agency, no formal conformity analysis is required.

Geological Resources. Short-term, minor, adverse impacts on geology and soils would be anticipated due to construction and demolition activities, such as grading, excavation, and recontouring of the soil. Implementation of best management practices (BMPs) and Environmental Protection Measures, as described in **Section 3.2.4** and **Table 2-2**, during construction and demolition activities would limit adverse impacts on geology and soils. Therefore, no long-term, adverse, direct or indirect impacts on soils, regional or local topography, or physiographic features at the installation are anticipated.

Water Resources. Short-term, minor adverse impacts on surface water would be anticipated due to the increase in impervious surface area. As part of the Proposed Action, Beale AFB would relocate and realign the drainages at the proposed project site so "no net loss" in drainages would occur and runoff would continue to drain into the realigned drainages. With adherence to BMPs and Environmental Protection Measures as described in **Section 3.3.4** during construction and demolition activities significant adverse impacts from erosion would be avoided. Therefore, no permanent adverse impacts on surface water are anticipated.

Short-term, negligible, adverse impacts on groundwater would be anticipated due to the slight increase in water demand during construction and demolition activities. However, potential increases in water demand associated with Proposed Action would be temporary and are not anticipated to exceed existing capacity. Therefore, no permanent adverse impacts on groundwater are anticipated

Permanent, minor, adverse impacts on jurisdictional waters of the United States would be anticipated due to the filling, trenching, or moving of approximately 0.41 acres of jurisdictional waters of the United States within the proposed project area. All impacted jurisdictional waters of the United States would have an equivalent acreage created on-site; therefore, there would be no net loss of jurisdictional waters of the United States. All of the jurisdictional waters of the United States that would be adversely impacted by the Proposed Action are degraded and have a very low functionality. With adherence to BMPs and Environmental Protection Measures as described in **Section 3.3.4** during construction and demolition activities, negligible adverse impacts on off-site waters of the United States and wetlands would be avoided. Therefore, significant adverse impacts on jurisdictional waters of the United States and wetlands are not anticipated.

Biological Resources. Implementation of the Proposed Action would result in a loss of approximately 14 acres of nonnative grassland habitat during construction. This is a negligible loss of this habitat type and represents a very small portion of the abundance of comparable nonnative grassland Beale AFB has in the surrounding area.

No vernal pools would be impacted by the Proposed Action. During field surveys, it was confirmed that ditches on the project site did not hold water long enough to support fairy shrimp; therefore, no listed wetland or vernal pool species are expected to occur in the project area. In addition, no impacts to

sensitive species associated with drainages on the project site are expected. The Proposed Action and Alternative 1 are not expected to impact special-status species.

The buildings slated for demolition for this project are being used for nesting by numerous birds. The planned project would have short-term, direct, adverse impacts on migratory birds by disturbing nesting sites and increasing mortality during building demolition, ground-disturbing activities, or vegetation clearing. However, implementation of seasonal timing to conduct demolition and tree clearing during the nonbreeding season would avoid significant impacts. Long-term, indirect, adverse impacts from the Proposed Action would result from subsequent disturbance during use of new facilities and generation of associated noise. Long-term disturbances would not be significant because the nonnative grasslands affected by the Proposed Action have been subject to continual disturbances from human activity, and the types of wildlife that use the area are accustomed to human presence.

The demolition of the buildings for this project could have a direct, adverse impact on several species of bats that are known to occur on Beale AFB and sometimes use buildings as roosts. Developed areas generally provide no suitable habitat for special-status species; however, buildings could provide roosting habitat for special-status bats such as pallid bat and pale big-eared bat. These impacts would be avoided by inspecting the buildings for bats prior to demolition. A building survey would be conducted in the winter prior to the Proposed Action to determine if the structures are used as a hibernaculum, and then again prior to demolition. If bats are found to use a building, a bat exclusion system would be implemented to prevent significant impacts. This would be implemented during the nonbreeding season to avoid impacts on reproductive females during the critical period immediately prior to parturition or during lactation, and well before winter hibernation.

Cultural Resources. For the purpose of determining potential impacts on cultural resources, the area of potential effect (APE) for the Proposed Action is defined as the area within 500 feet of the boundaries of the Fitness Center construction site and the area where facilities are proposed for demolition. The site record search resulted in no known recorded archaeological resources in the APE. The APE for the Proposed Action and Alternative 1 has been previously surveyed for cultural resources, and no cultural resources with a visible surface component were located and identified.

Building 2459 (HAWC) was constructed in 1952. Consultation with the State Historic Preservation Officer (SHPO) has been initiated by the Beale AFB Cultural Resources Manager to determine if Building 2459 is potentially eligible for nomination to the National Register of Historic Places (NRHP). Beale AFB has evaluated the property as not eligible for the NRHP. It is anticipated that the SHPO would concur with Beale AFB's evaluation recommendation. Should Building 2459 be determined to be eligible for the NRHP, Beale AFB would comply with Section 106 of the NHPA, as appropriate. Therefore, no direct or indirect, adverse impacts to cultural resources are anticipated from implementation of the Proposed Action.

Transportation. Short-term, minor adverse impacts on traffic circulation due to road and lane closures from construction and demolition activities would be anticipated. All road and lane closures would be temporary in nature and would be coordinated with Security Forces. In addition, appropriate signage would be in place; therefore, no long-term, adverse direct or indirect impacts on transportation systems are anticipated.

Safety. Short-term, minor, adverse impacts on safety would be anticipated due to the potential slight increase in the short-term risks associated with construction and demolition activities that would occur during the normal workday. During all phases of the Proposed Action and Alternative 1, safety standards required by the OSHA and NIOSH would be followed. Therefore, no long-term, adverse, direct or indirect impacts on safety are anticipated.

Although no explosive quantity distance Safety Zones, unexploded ordnance (UXO), or Military Munitions Response Program (MMRP) sites are located at the proposed project site, there is still the possibility of encountering munitions, UXO, and Chemical Agent Identification Sets (CAIS) related materials below the ground surface during construction and demolition activities. If inadvertent discovery of munitions, UXO, or CAIS is discovered during construction and demolition activities, activities would be stopped and Environmental Protection Measures as described in **Section 3.7.4** would be followed.

Utilities and Infrastructure. The Proposed Action and Alternative 1 would result in the use of infrastructure and utility resources such as water, sanitary sewer and wastewater, storm water, electrical, natural gas, and communication systems. Impacts on infrastructure and utilities would be negligible to minor and use of these systems is not anticipated to exceed the current capacities.

Hazardous Materials and Wastes. Short-term, minor adverse impacts to construction workers would occur from encountering hazardous materials and wastes due to construction and demolition activities. The Proposed Action and Alternative 1 would overlap Environmental Restoration Program (ERP) Site 22, ERP Site 23, ERP Site 39, and Solid Waste Management Unit (SWMU) 23. The primary constituents of concern at these ERP sites are hazardous substances in soil and groundwater, which include fuel oil and industrial solvents and their degradation products, such as trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichloroethene (DCE), carbon tetrachloride, and petroleum hydrocarbons. The TCE and PCE groundwater plumes to the east of the Fitness Center site are not directly upgradient and do not appear to be migrating toward the site. The DCE plume identified with soil vapor samples from borings extends under the eastern half of the site; however, the low levels of DCE encountered would not be anticipated to pose a hazard to construction workers nor produce vapor concentrations within an enclosed building space sufficient to adversely impact installation personnel. Thirty-seven USTs at the Fitness Center site were removed from 1994 to 1998 and any soils contaminated with petroleum hydrocarbons to unacceptable levels have been excavated or remediated. No impacts are anticipated from site grading and excavation activities during construction of the Fitness Center; however, equipment operators and workers would be aware of the potential for uncovering residual contamination or buried objects. Further, the presence of fill in former tank locations within the Fitness Center improvement areas would be recognized in foundation design and planning.

The buildings scheduled for demolition are within ERP Site 39, Building 2145 (former area of concern 72). Demolition would not impact contamination in soil and groundwater found in and around Building 2145, south of the demolition sites.

It is anticipated that the demolition of Buildings 2418, 2422, 2422, and 2459 would generate asbestos-containing materials (ACM) and lead-based paint (LBP) wastes. Any ACM or LBP encountered during building demolition and cleanup would be handled in accordance with established USAF policy, the *Asbestos Management Plan*, and the *Lead-Based Paint Management Plan*. Specifications for new facilities would be in accordance with USAF policies and regulations. Demolition plans would be reviewed by civil engineering personnel at Beale AFB to ensure appropriate measures were taken to reduce potential exposure to, and release of, asbestos and lead from LBP. The USAF would follow its current practices for removal of friable asbestos, other ACM, and LBP associated with these buildings. Friable ACM would be removed and disposed of at an asbestos-permitted landfill. Because the Proposed Action might affect ACM and LBP at only four buildings at Beale AFB and existing handling procedures would ensure OSHA standards are not exceeded, impacts from the removal of ACM and LBP would be negligible.

Minor amounts of hazardous materials and wastes would be generated during project construction. There would be no significant impacts on hazardous materials and wastes due to implementation of the Proposed Action.

The ERP Program Manager at Beale AFB would consult with the Headquarters Air Combat Command Restoration Program Manager and arrange for a waiver to the restrictions on disturbing an ERP site prior to the proposed projects commencing. Because of the potential threat of contamination from ERP sites during construction, it is recommended that a health and safety plan be prepared in accordance with Occupational Safety and Health Administration (OSHA) requirements prior to commencement of construction activities. In addition, should contamination be encountered, handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations, Air Force Instructions, and Beale AFB programs and procedures. Workers at the ERP sites listed above would either have OSHA 40-hour Hazardous Waste Operations and Emergency Response training, or a supervisor would have OSHA Site Supervisor certification.

Cumulative Impacts

Cumulative impacts on environmental resources result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts would result from individually minor but collectively significant actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Section 4 presents the potential cumulative effects on environmental resources from the Proposed Action when compared with other past, present, and future activities. **Table 4-2** summarizes the cumulative impacts on the resource areas. No significant cumulative impacts on the environmental would be anticipated from the Proposed Action or Alternative 1 in conjunction with other activities.

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1. Purpose of and Need for the Proposed Action

This Environmental Assessment (EA) describes Beale Air Force Base's (AFB) proposal to construct a Fitness Center and demolish existing inadequate and substandard recreational facilities. This section presents the purpose of and need for the Proposed Action, the location and mission of Beale AFB, a summary of key environmental compliance requirements, and an introduction to the organization of this document and the EA.

1.1 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to construct a new Fitness Center to support combat readiness, improve the physical fitness of active-duty and reserve personnel, and to bring Fitness Center facilities and programs into compliance with Air Force Handbook (AFH) 32-1084, *Facility Requirements* (USAF 1996), *Air Force Services Facilities Design Guide, Design: Fitness Centers* (USAF 2005), and Air Force Instruction (AFI) 10-248, *Fitness Program* (USAF 2006).

The Proposed Action is needed because the ability of Beale AFB to support fitness programs for military personnel, dependants, and eligible users is currently diminished. Based on a U.S. Air Force (USAF) Fitness Center Facility Assessment, the existing Harris Fitness Center and Health and Wellness Center (HAWC) have been deemed inadequate in size and are considered to be in substandard condition. In addition, these existing facilities lack many of the functions needed to provide the varied physical fitness and recreational program essentials to support military readiness and improve the physical fitness of active duty and reserve personnel. Without a new Fitness Center, Beale AFB would continue to experience difficulty meeting USAF physical fitness requirements.

1.2 Beale AFB Location and Mission

Beale AFB is a USAF installation under the Air Combat Command (ACC). Beale AFB is headquarters to the 9th Reconnaissance Wing (RW). The 9 RW is responsible for providing national and theater command authorities with timely, reliable, high-quality, and high-altitude reconnaissance products. To accomplish this mission, 9 RW is equipped with a fleet of U-2 and Global Hawk reconnaissance aircraft and associated support equipment. The 9 RW maintains a high state of readiness in its combat support and combat service support forces for potential deployment in response to theater contingencies. The 9 RW also provides support for Beale AFB, ranging from financial, personnel, housing, maintenance, legal, recreational, and medical needs to fire protection, Chaplin services, and installation security.

The USAF fitness mission is to enhance combat readiness by supporting the unit commander's fitness program and providing fitness and sports opportunities to all authorized users. The USAF fitness facility requirement is to facilitate the readiness, fitness, and morale of USAF members by providing effective, efficient, and pleasant spaces for individual and group exercise, unit physical training, team and individual sports, testing, training/education, and necessary support (USAF 2005).

Beale AFB is a 22,944-acre military installation in Yuba County, California, approximately 40 miles north of Sacramento, 13 miles east of Marysville, and 25 miles west of Grass Valley (see **Figure 1-1**). The installation is between the Yuba and Bear rivers in an area that characterizes the transition from the western Sacramento Valley east to the Sierra Nevada foothills. **Figure 1-2** shows a close-up of the installation and the location of the areas proposed for new construction and the demolition of existing facilities.

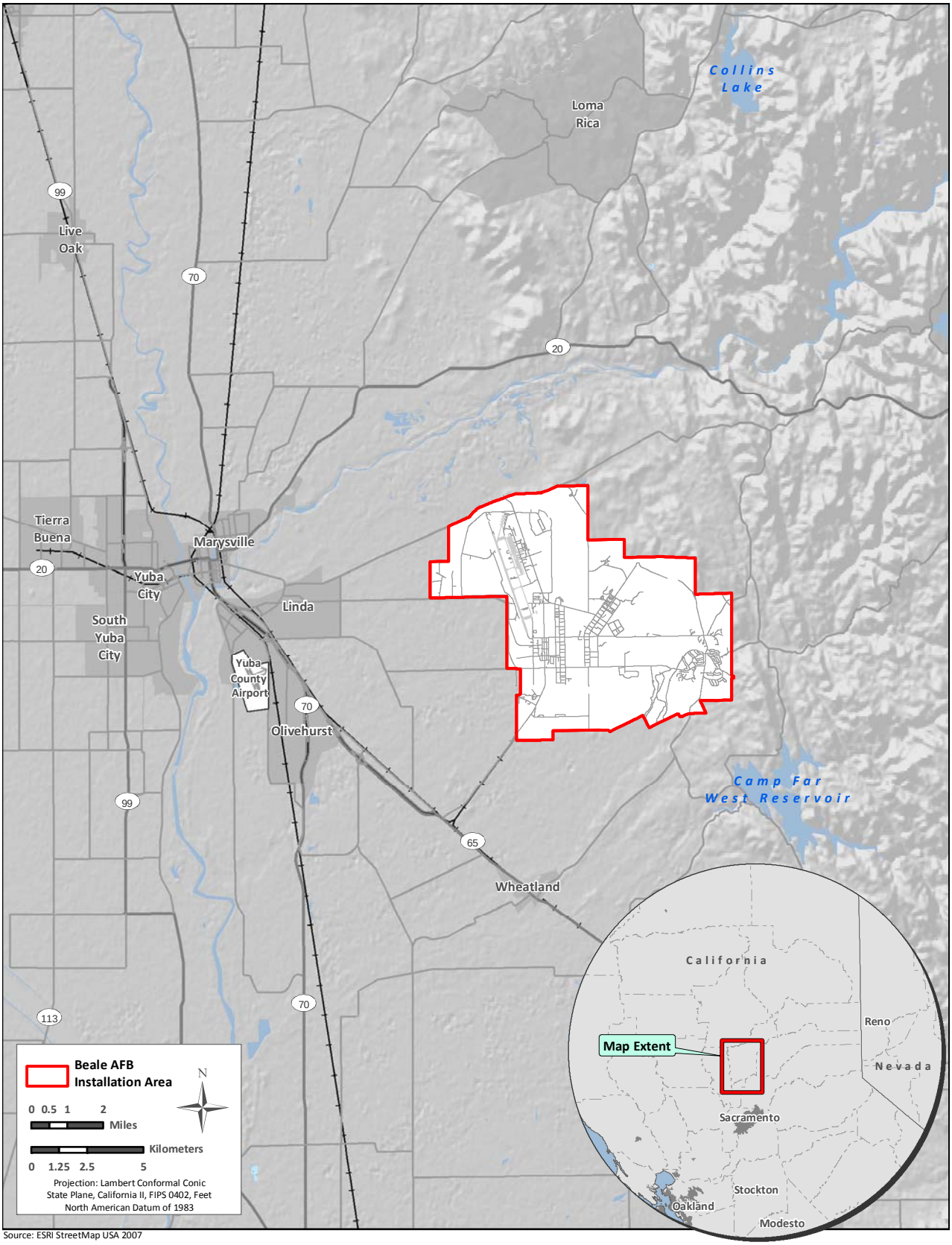

Figure 1-1. Beale Air Force Base Location Map

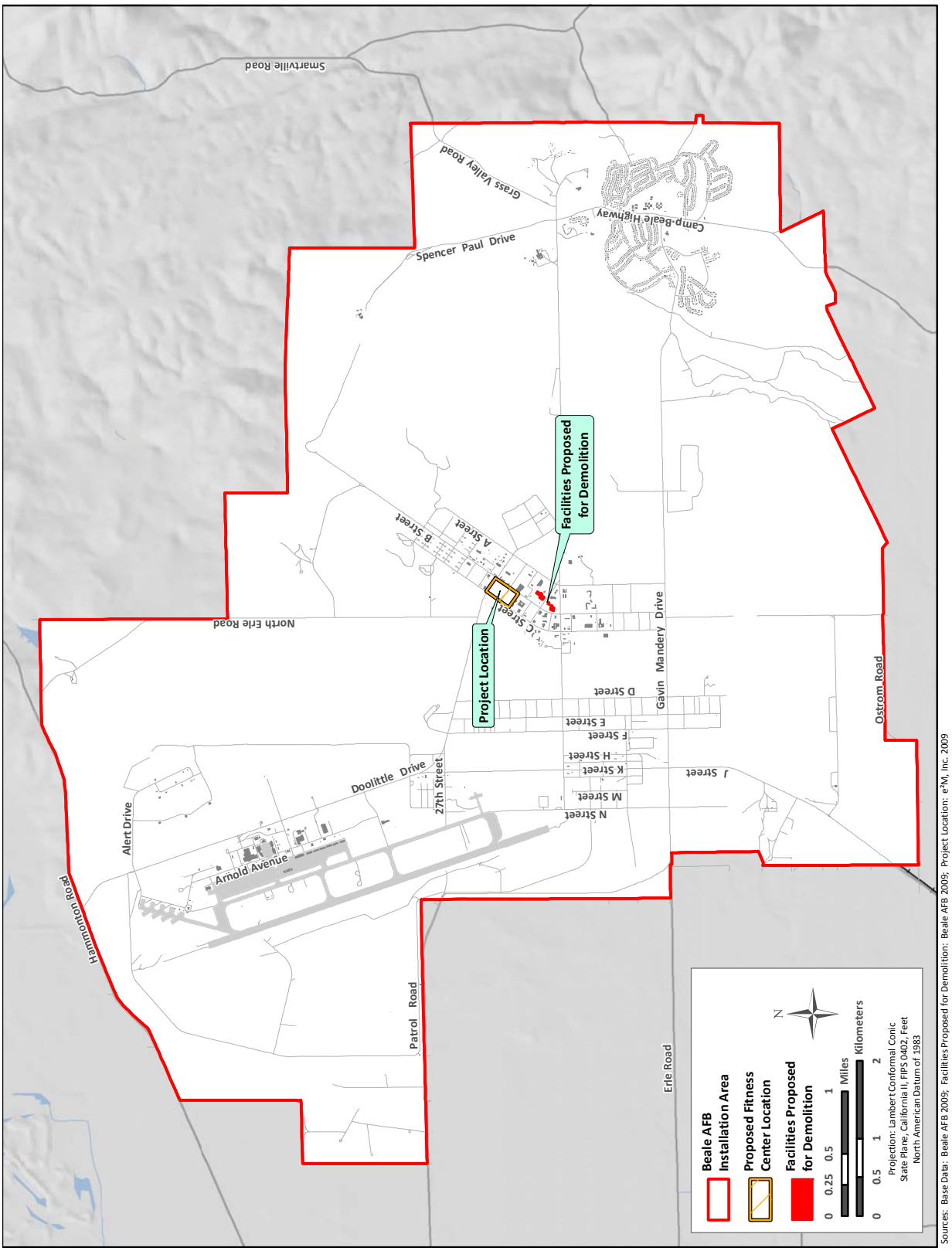

Figure 1-2. Beale AFB and Proposed Construction and Demolition Areas

1.3 Summary of Key Environmental Compliance Requirements

1.3.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] Section 4321-4347) is a Federal statute requiring the identification and analysis of potential environmental impacts associated with proposed Federal actions before those actions are taken. The intent of NEPA is to help decisionmakers make well-informed decisions based on an understanding of the potential environmental consequences and take actions to protect, restore, or enhance the environment. NEPA established the Council on Environmental Quality (CEQ) that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The CEQ regulations mandate that all Federal agencies use a prescribed structured approach to environmental impact analysis. This approach also requires Federal agencies to use an interdisciplinary and systematic approach in their decisionmaking process. This process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action.

The process for implementing NEPA is codified in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee Federal policy in this process. The CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare a Finding of No Significant Impact (FONSI) or whether the preparation of an Environmental Impact Statement (EIS) is necessary. The EA would aid in an agency's compliance with NEPA when an EIS is unnecessary and facilitate preparation of an EIS when one is required.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, state, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is *Environmental Impact Analysis Process* (EIAP), 32 CFR Part 989, as amended.

1.3.2 Integration of Other Environmental Statutes and Regulations

To comply with NEPA, the planning and decisionmaking process for actions proposed by Federal agencies involves a study of other relevant environmental statutes and regulations. The NEPA process, however, does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS, which enables the decisionmaker to have a comprehensive view of key environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated "with other planning and environmental review procedures required by law or by agency so that all such procedures run concurrently rather than consecutively."

The EA will examine potential impacts of the Proposed Action and alternatives on nine resource areas: air quality, geological resources, water resources, biological resources, cultural resources, traffic, safety, utilities and infrastructure, and hazardous materials and wastes. These resources could potentially be affected by the Proposed Action and include applicable elements of the human environment that are prompted for review by Executive Order (EO), regulation, or policy. Some environmental resources and conditions that are often analyzed in an EA have been omitted from this analysis. The following details the basis for such exclusions:

- ***Land Use.*** All activities associated with the Proposed Action would be consistent with present and foreseeable land use patterns at Beale AFB. Implementation of the Proposed Action would

not significantly alter the existing land use at Beale AFB. Accordingly, the USAF has omitted detailed examination of land use.

- ***Noise.*** Implementation of the Proposed Action does not involve permanent alterations to aircraft inventories, operations, or missions. No new permanent ground-based heavy equipment operations are included in the Proposed Action. No activity included in the Proposed Action would result in a situation where residences would be impacted by an increase in present ambient noise levels. Furthermore, noise produced by construction and demolition activities associated with the Proposed Action would not significantly affect sensitive receptors. Accordingly, USAF has omitted detailed examination of noise.
- ***Socioeconomics.*** The Proposed Action does not involve any activities that would directly affect off-installation activities, or directly or indirectly contribute to changes in socioeconomic resources. There would be no change in the number of personnel assigned to Beale AFB and no changes in area population or associated changes in demand for housing and services. Accordingly, USAF has omitted detailed examination of socioeconomics in this EA.
- ***Environmental Justice.*** The Proposed Action does not involve any activities that would contribute to changes in low-income or minority populations because all work would be performed within the installation boundary. Accordingly, USAF has omitted detailed examination of environmental justice.

Appendix A contains examples of relevant laws, regulations, and other requirements that are often considered as part of the analysis. Where useful to better understanding, key provisions of the statutes and EOs described in **Appendix A** will be discussed in more detail in the text of the EA.

1.3.3 Interagency and Intergovernmental Coordination for Environmental Planning and Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decisionmaking process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions would be enhanced if proponents provide information to the public and involve the public in the planning process. The Intergovernmental Coordination Act and EO 12372, *Intergovernmental Review of Federal Programs*, require Federal agencies to cooperate with and consider state and local views in implementing a Federal proposal. AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning* (IICEP), requires the USAF to implement the IICEP process, which is used for the purpose of agency coordination and implements scoping requirements.

Through the IICEP process, Beale AFB notified relevant Federal, state, and local agencies of the Proposed Action and alternatives and provided them sufficient time to make known their environmental concerns specific to the action. The IICEP process also provided Beale AFB the opportunity to cooperate with and consider state and local views in implementing the Federal proposal. In addition, the Draft EA and FONSI were mailed to relevant agencies for a 30-day IICEP review period. All IICEP material related to this EA is included in **Appendix B**. The agencies contacted during the IICEP process are listed in **Appendix B**.

A Notice of Availability (NOA) was published in the Marysville *Appeal-Democrat* and the Beale AFB electronic publication and made available to the public for a 30-day review period. The NOA was issued to solicit comments on the Proposed Action and involve the local community in the decisionmaking process. No public comments on the Draft EA and FONSI were received during this review period.

Appendix B includes a copy of the NOA as it appeared in the Marysville *Appeal-Democrat* and Beale AFB electronic publication.

1.4 Organization of this Document

This EA is organized into five sections. **Section 1** provides the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action, Alternatives, and the No Action Alternative. **Section 3** contains a characterization of the affected environment, or baseline environmental conditions, and addresses potential environmental consequences associated with the Proposed Action, Alternative 1, and the No Action Alternative. **Section 4** provides an analysis of the potential cumulative and other impacts. **Section 5** presents the preparers of the document. **Section 6** lists the reference documents used in the preparation of this EA. **Appendix A** includes a description of environmental laws, regulations, and EOs potentially applicable to the Proposed Action. **Appendix B** includes the IICEP distribution list and the NOA. **Appendix C** includes the calculations to support air quality emission estimates (see also **Section 3.1**).

2. Description of Proposed Action and Alternatives

This section describes the Proposed Action and alternatives. As discussed in **Section 1.3.1**, the NEPA process evaluates potential environmental consequences associated with a proposed action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a proposed action, as defined in **Section 1.1**. In addition, CEQ regulations also specify the inclusion of a No Action Alternative against which potential impacts would be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in detail in accordance with CEQ regulations. Implementation of the Proposed Action, as described in **Section 2.1,** is Beale AFB's Preferred Alternative.

2.1 Detailed Description of the Proposed Action

Under the Proposed Action, Beale AFB proposes to construct a Fitness Center and demolish existing inadequate and substandard recreational facilities. All construction project sizes stated below are approximate, since the Fitness Center has not been formally designed. The Proposed Action would consist of the following construction and demolition activities:

- Construct a 60,794-square-foot (ft^2) Fitness Center
- Construct associated parking lots (80,729 ft^2)
- Install utilities for the Fitness Center
- Demolish six existing parking lots and concrete sidewalk area on the proposed project site
- Remove a portion of 26th Street that goes through the middle of the site in order to meet anti-terrorism/force protection (AT/FP) requirements
- Demolish the HAWC (Building 2459, 48,513 ft^2)
- Demolish the existing Harris Fitness Center (Building 2418, 25,975 ft^2)
- Demolish the utility/storage facility adjacent to the existing Fitness Center (Building 2424, 1,036 ft^2)
- Demolish the pool house and pool (Building 2422, 1,857 ft^2)
- Realign the drainages that go through the proposed project site. New site drainages would be designed so "no net loss" in drainages would occur.

The proposed Fitness Center project site is located in the main installation cantonment area between Doolittle Drive, 25th Street, B Street, and C Street (see **Figure 2-1**). The proposed Fitness Center site has been previously disturbed. The site is mostly grassland with scattered trees. There are four paved parking lots and evidence of two older asphalt parking areas and a concrete sidewalk on the site. There are also three drainages that bisect the site. The facilities proposed for demolition are located to the south of the proposed Fitness Center project site between Warren Shingle Road, 24th Street, A Street, and B Street. The Proposed Action would take approximately 18 months to complete and would occur in 2010 and 2011.

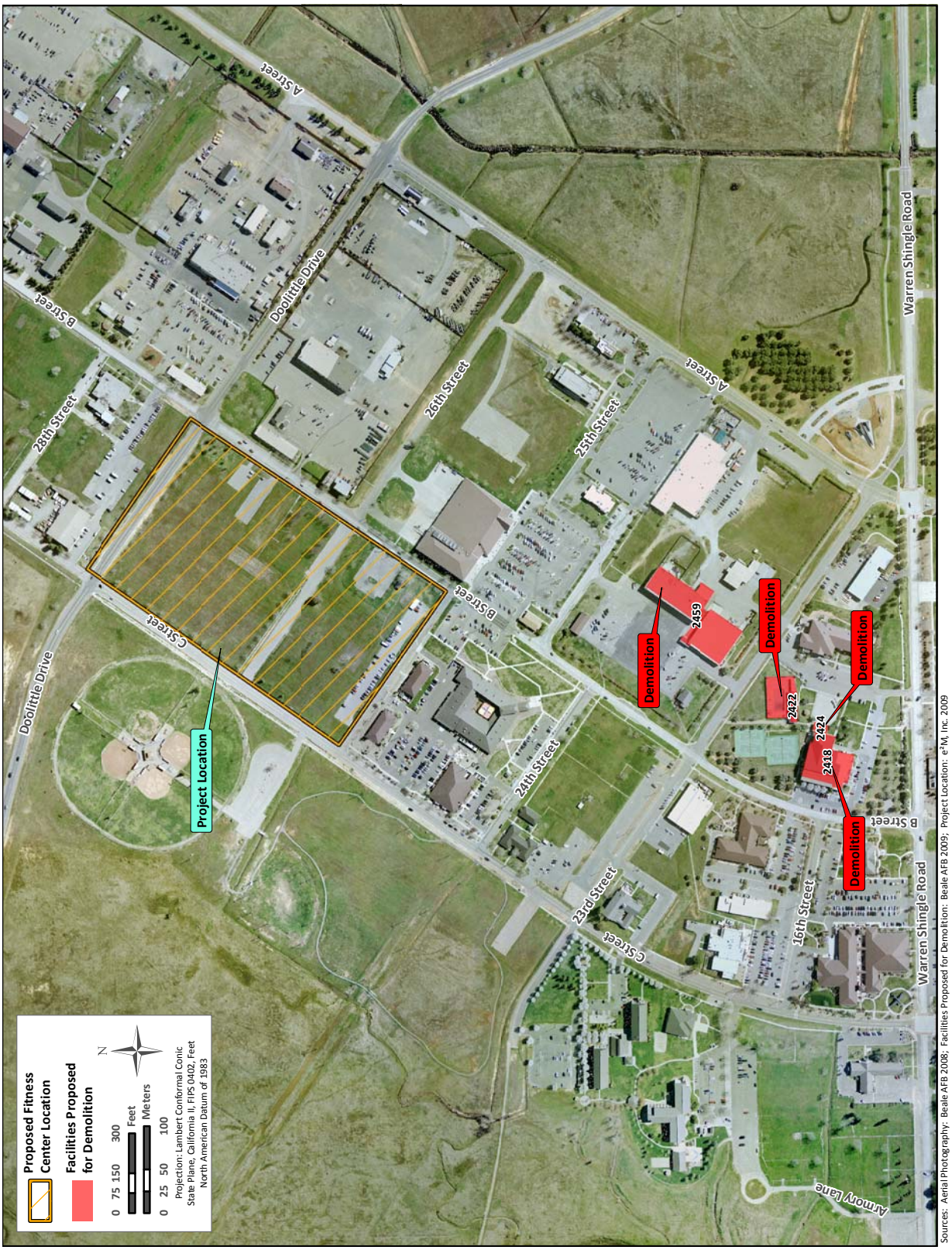

Figure 2-1. Overview of Proposed Construction and Demolition Sites

2.2 Alternatives

2.2.1 Alternative 1

Under Alternative 1, Beale AFB would conduct all of the actions described under the Proposed Action (see **Section 2.1**) and, in addition, widen Doolittle Drive on either side by adding left- and right-hand turn lanes into the proposed Fitness Center.

2.2.2 No Action Alternative

Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation. Under the No Action Alternative, Beale AFB's varied physical fitness and recreational programs would continue to be held in facilities that are inadequate in size and are considered to be in substandard condition. Without a new Fitness Center, Beale AFB would continue to experience difficulty meeting USAF physical fitness requirements.

2.2.3 Alternatives Considered but Eliminated from Detailed Analysis

An alternative considered was the construction of the new Fitness Center and associated infrastructure north of 23rd Street, west of C Street, and the south of the softball fields. Because of the large amount of jurisdictional waters of the United States and vernal pools in this project area, this alternative is not considered viable. Therefore, this alternative is eliminated from further detailed analysis in the EA.

2.3 Summary of Impacts and Environmental Protection Measures

Table 2-1 presents a summary of the environmental impacts that could result from implementation of the Proposed Action, Alternative 1, and the No Action Alternative. **Table 2-2** presents the best management practices (BMPs) and environmental protection measures that Beale AFB and their contractors would comply with to minimize or eliminate impacts on environmental resources.

Table 2-1. Summary of Environmental Impacts

Environmental Resource	Proposed Action	Alternative 1	No Action Alternative
Air Quality (Section 3.1)	Air quality emissions from the Proposed Action would be minor, would be less than 10 percent of the emissions inventory for SVI AQCR, and are below Feather River Air Quality Management District (FRAQMD) significance thresholds when employing FRAQMD conservation measures with the exception of NO_x in 2011. There would be negligible adverse impact on local or regional air quality from implementation of the Proposed Action. Since Beale AFB is located in an unclassified/attainment area for criteria pollutants identified by the U.S. Environmental Protection Agency (USEPA), no formal conformity analysis is required.	Air quality emissions from Alternative 1 would be minor, would be less than 10 percent of the emissions inventory for SVI AQCR, and are below FRAQMD significance thresholds when employing FRAQMD conservation measures with the exception of NO_x in 2011. There would be negligible, adverse impact on local or regional air quality from implementation of Alternative 1. Since Beale AFB is located in an unclassified/attainment area for criteria pollutants identified by the USEPA, no formal conformity analysis is required.	No direct or indirect adverse impacts.
Geological Resources (Section 3.2)	Short-term, minor, adverse impacts on geology and soils would be anticipated due to construction and demolition activities, such as grading, excavation, and recontouring of the soil. However, implementation of BMPs and Environmental Protection Measures, as described in **Table 2-2**, would prevent long-term, adverse, direct or indirect impacts.	Short-term, minor, adverse impacts on geology and soils would be anticipated due to construction and demolition activities, such as grading, excavation, and recontouring of the soil. However, implementation of BMPs and Environmental Protection Measures, as described in **Table 2-2**, would prevent long-term, adverse, direct or indirect impacts.	No direct or indirect adverse impacts.

Environmental Resource	Proposed Action	Alternative 1	No Action Alternative
Water Resources (Section 3.3)	*Surface Water:* Short-term, minor, adverse impacts on surface water would be anticipated due to the increase in impervious surface area. However, adherence to BMPs and Environmental Protection Measures, as described in **Table 2-2,** would prevent permanent adverse impacts. *Groundwater:* Temporary, negligible, adverse impacts on groundwater would be anticipated due to the slight increase in water demand during construction and demolition activities. However, potential increases in water demand are temporary and would not result in permanent adverse impacts. *Floodplains:* No temporary or permanent adverse impacts are anticipated. *Jurisdictional Waters of the United States:* Permanent, minor, adverse impacts on jurisdictional waters of the United States would be anticipated due to the filling, trenching, or moving of approximately 0.41 acres of jurisdictional waters of the United States within the proposed project area. All impacted jurisdictional waters of the United States would have an equivalent acreage created on-site; therefore, there would be no net loss of jurisdictional waters of the United States. All of the jurisdictional waters of the United States that would be adversely impacted by the Proposed Action, are degraded, and have a very low functionality.	*Surface Water:* Short-term, minor adverse impacts on surface water would be anticipated due to the increase in impervious surface area. However, adherence to BMPs and Environmental Protection Measures, as described in **Table 2-2,** would prevent permanent adverse impacts. *Groundwater:* Temporary, negligible, adverse impacts on groundwater would be anticipated due to the slight increase in water demand during construction and demolition activities. However, potential increases in water demand are temporary and would not result in permanent adverse impacts. *Floodplains:* No temporary or permanent adverse impacts are anticipated. *Jurisdictional Waters of the United States:* Permanent, minor, adverse impacts on jurisdictional waters of the United States would be anticipated due to the filling, trenching, or moving of approximately 0.47 acres of jurisdictional waters of the United States within the proposed project area. All impacted jurisdictional waters of the United States would have an equivalent acreage created on-site; therefore, there would be no net loss of jurisdictional waters of the United States. All of the jurisdictional waters of the United States that would be adversely impacted by Alternative 1, are degraded, and have a very low functionality.	No direct or indirect adverse impacts.

Environmental Resource	Proposed Action	Alternative 1	No Action Alternative
Biological Resources (Section 3.4)	*Vegetation:* Approximately 14 acres of nonnative grasslands would be lost. Relative to the abundance of this habitat type on the installation, this would be a negligible loss. The long-term, adverse impacts on nonnative grassland from implementation of the Proposed Action would be negligible. *Wildlife*: No significant impacts would be anticipated if Environmental Protection Measures, as described in **Section 3.4.4**, are followed. *Wetlands:* No vernal pools would be impacted by the Proposed Action. *Special Status Species:* No short- or long-term adverse impacts would be expected to special status species.	*Vegetation:* Approximately 14.3 acres of nonnative grasslands would be lost. Relative to the abundance of this habitat type on the installation, this would be a negligible loss. The long-term, adverse impacts on nonnative grassland from implementation of Alternative 1 would be negligible. *Wildlife:* No significant impacts would be anticipated if Environmental Protection Measures, as described in **Section 3.4.4**, are followed. *Wetlands*: No vernal pools would be impacted by Alternative 1. *Special Status Species:* No short- or long-term adverse impacts would be expected to special status species.	No direct or indirect adverse impacts.
Cultural Resources (Section 3.5)	No indirect or direct adverse impacts on cultural resources are expected.	No indirect or direct adverse impacts on cultural resources are expected.	No direct or indirect adverse impacts.
Transportation (Section 3.6)	Short-term, minor, adverse impacts on traffic circulation due to road and lane closures from construction and demolition activities would be expected. No long-term, adverse, direct or indirect impacts on transportation systems are anticipated.	Short-term, minor adverse impacts on traffic circulation due to road and lane closures from construction and demolition activities would be expected. No long-term, adverse, direct or indirect impacts on transportation systems are anticipated.	No direct or indirect adverse impacts.

Environmental Resource	Proposed Action	Alternative 1	No Action Alternative
Safety (Section 3.7)	Short-term, minor, adverse impacts on safety would be anticipated due to the potential slight increase in the short-term risks associated with construction and demolition activities that would occur during the normal workday. Although no explosive quantity distance (EQD) Safety Zones, unexploded ordnance (UXO), Military Munitions Response Program (MMRP), and Chemical Agent Identification Sets (CAIS) sites are located at the proposed project site, there is still the possibility of encountering munitions, UXO, and CAIS related materials below the ground surface during construction and demolition activities.	Short-term, minor, adverse impacts on safety would be anticipated due to the potential slight increase in the short-term risks associated with construction and demolition activities that would occur during the normal workday. Although no EQD Safety Zones, UXO, MMRP, and CAI) sites are located at the proposed project site, there is still the possibility of encountering munitions, UXO, and CAIS related materials below the ground surface during construction and demolition activities.	No direct or indirect adverse impacts.
Utilities and Infrastructure (Section 3.8)	*Water Supply:* Water demand would increase slightly during construction and demolition activities, which would result in a short-term, negligible adverse impact. However, increases in water demand would be temporary and no long-term, adverse, direct, or indirect impacts are anticipated.	*Water Supply:* Water demand would increase slightly during construction and demolition activities, which would result in a short-term, negligible adverse impact. However, increases in water demand would be temporary and no long-term, adverse, direct, or indirect impacts are anticipated.	No direct or indirect adverse impacts

Environmental Resource	Proposed Action	Alternative 1	No Action Alternative
Utilities and Infrastructure (Section 3.8) Cont'd.	*Sanitary Sewer and Wastewater System:* Construction would increase the demand on on-installation wastewater treatment, which would result in short-term negligible, adverse impacts. These increases would be temporary and would not result in long-term, adverse, direct or indirect impacts. *Storm Water Systems:* Short- and long-term, negligible to minor impacts would occur. No net loss in drainages would result from the Proposed Action. Ground disturbance would temporarily increase the potential for soil erosion and sheet flow runoff. Soil compaction and increased impermeable surfaces (e.g., new pavements and sidewalks) would decrease storm water permeation into the ground and thereby permanently increase sheet flow runoff into the storm water drainage system. *Electrical System:* No short- or long-term adverse impacts are anticipated. *Natural Gas System:* No short- or long-term adverse impacts are anticipated. *Communications Systems:* No short- or long-term adverse impacts are anticipated.	*Sanitary Sewer and Wastewater System:* Construction would increase the demand on on-installation wastewater treatment, which would result in short-term, negligible ,adverse impacts. These increases would be temporary and would not result in long-term, adverse, direct or indirect impacts. *Storm Water Systems:* Short- and long-term, negligible to minor impacts would occur. No net loss in drainages would result from the Proposed Action. Ground disturbance would temporarily increase the potential for soil erosion and sheet flow runoff. Soil compaction and increased impermeable surfaces (e.g., new pavements and sidewalks) would decrease storm water permeation into the ground and thereby permanently increase sheet flow runoff into the storm water drainage system. *Electrical System:* No short- or long-term adverse impacts are anticipated. Natural Gas System: No short- or long-term adverse impacts are anticipated. *Communications Systems:* No short- or long-term adverse impacts.	

Environmental Resource	Proposed Action	Alternative 1	No Action Alternative
Hazardous Materials and Wastes (Section 3.9)	Short-term, minor, adverse impacts to construction workers would occur from encountering hazardous materials and wastes due to construction and demolition activities. Projects included in the Proposed Action are in the vicinity of active Environmental Restoration Program (ERP) sites and a contaminated groundwater plume. Construction activities would use hazardous materials and generate hazardous wastes, and buildings to be demolished associated with the Proposed Action could contain asbestos-containing materials (ACM) and lead-based paint (LBP).	Short-term, minor, adverse impacts to construction workers would occur from encountering hazardous materials and wastes due to construction and demolition activities. Projects included in Alternative 1 are in the vicinity of active ERP sites and a contaminated groundwater plume. Construction activities would use hazardous materials and generate hazardous wastes, and buildings to be demolished associated with the Alternative 1 could contain ACM and LBP.	No direct or indirect adverse impacts

Table 2-2. Environmental Protection Measures

Environmental Resource	Environmental Protection Measures
Air Quality (see **Section 3.1.4)**	***Measure 1: Fugitive Dust Control.*** Contractors would be required to follow FRAQMD fugitive dust control measures, such as wind breaks and barriers, frequent water applications, application of soil additives, control of vehicle access, vehicle speed restrictions, covering of piles, use of gravel at site exit points, washing of equipment at the end of each work day and prior to site removal, and work stoppage. The environmental protection measures used in the URBEMIS model for fugitive dust control include the following for fine and mass grading: • Soil stabilizing measures such as replacing ground cover in disturbed areas as quick as possible; watering exposed surfaces two times daily; and equipment loading/unloading. • Unpaved roads measures to include managing haul road dust by watering these roads two times daily. ***Measure 2: Construction Equipment Emission Controls.*** Construction equipment exhaust emissions would not exceed FRAQMD Regulation II, Rule 3.0, *Visible Emissions* limitations (40 percent opacity or Ringlemann 2.0). All construction equipment would be properly tuned and maintained prior to and for the duration of the Proposed Action. In addition, construction equipment and vehicles would reduce idling times to 5 minutes or less when possible. The environmental protection measures used in the URBEMIS model for construction equipment emission controls include the following for demolition, grading, trenching, paving, and building construction: • Construction equipment would use diesel particulate filters. • Construction equipment would use diesel oxidation catalysts. ***Measure 3: Power Sources.*** The Proposed Action would utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
Geological Resources (see **Section 3.2.4)**	***Measure 1: Best Management Practices.*** Fugitive dust from construction and demolition activities would be minimized by BMPs such as watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. In addition, standard erosion-control means (e.g., silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce environmental consequences related to those activities.

Environmental Resource	Environmental Protection Measures
Water Resources (see **Section 3.3.4)**	***Measure 1: Clean Water Act Section 401 and 404 Permits and Compensation.*** Preparation and approval of Clean Water Act Section 401 and 404 permit applications would be obtained prior to commencement of construction and demolition activities for direct impacts on any jurisdictional Waters of the United States. Due to the degraded conditions and low functionality of the jurisdictional waters of the United States found within the project area, compensation for impacts would be done by either rerouting the ditches or through the creation of similar drainage ditches. The replacement rate for impacts to jurisdictional waters of the United States impacted by the project would be 1:1. The total acreage of jurisdictional waters of the United States after construction should be the same as prior to construction though the project may alter the courses or create additional drainages as needed to meet this requirement. All drainages rerouted or created for this purpose would need to be open soft-bottomed channels capable of the same functionality as the current ditches, carrying storm water and nuisance flows from and across the project site during storm events. ***Measure 2: Best Management Practices.*** The contractor would adhere to BMPs and applicable codes and ordinances to reduce storm water runoff-related impacts to a level of insignificance. Construction vehicles and equipment would be prohibited off-road, outside designated work areas. In addition, all construction vehicles would be fueled and serviced in designated service areas and vehicles would observe the posted speed limit on paved roads and a 20-mile per hour speed limit on unpaved roads. Erosion and sediment controls would be in place during construction and demolition activities to reduce and control siltation and erosion impacts on areas outside of the proposed project site. All soil excavated in jurisdictional waters of the United States would be removed and disposed of by the contractor outside of the project area. Coordination with the base Environmental Office is required prior to disposing of this excavated soil. ***Measure 3: Construction Timeframe.*** Construction would only be allowed between 1 June and 31 October per CWA permit requirements. ***Measure 4: National Pollutant Discharge Elimination System (NPDES) Permit Requirements.*** Preparation of CWA Section 402 NPDES permit applications would be obtained prior to commencing construction and demolition activities per the California Regional Water Quality Control Board (CRWQCB), Central Valley Region, requirements for grading.
Biological Resources (see **Section 3.4.4)**	***Measure 1: Timing of Construction Activities.*** All building demolition, vegetation clearing, and tree removal would occur outside of the bird breeding season. ***Measure 2: Bat Surveys and Exclusion.*** Buildings would be inspected during the winter by a biologist experienced in locating bats and bat colonies before the start of any demolition or construction activities. If a bat colony is found, then demolition would be delayed until an exclusion system is installed under the direction of the biologist to ensure that all bats are removed from the building and unable to return.

Environmental Resource	Environmental Protection Measures
Cultural Resources (see **Section 3.5.4)**	***Measure 1: Cultural Resources Awareness Training.*** All construction and maintenance personnel would receive cultural resources awareness training by the Base Environmental Office regarding the appropriate work practices necessary to protect cultural resources. This training would address Federal, state, and local laws regarding cultural resources; the importance of these resources and the purpose and necessity of protecting them; and the appropriate methods for reporting and protecting inadvertently discovered cultural resources. ***Measure 2: Inadvertent Discovery of Archaeological Resources.*** The following procedure applies to the inadvertent discovery of archaeological remains during ground-disturbing activities at the installation: *In the event that human remains, artifacts, or other archaeological materials are discovered during the course of any action, project, or activity at Beale AFB, all ground-disturbing activity at the point of discovery, within a reasonable buffer exclusionary area, must be halted and the Cultural Resources Manager notified.* The inadvertent discovery would be assumed to be potentially eligible for the NRHP and afforded appropriate protection until it is determined to be otherwise.
Transportation (see **Section 3.6.4)**	***Measure 1: Road Closure Coordination.*** As part of the Proposed Action, the USAF would coordinate with Beale AFB Security Forces regarding road and lane closures, appropriate signage, and the design of the proposed turn lanes on Doolittle Drive prior to commencement of any construction or demolition activities.
Safety (see **Section 3.7.4)**	***Measure 1: Ground Safety Requirements and Coordination.*** All contractors performing construction and demolition activities at Beale AFB are responsible for following ground safety regulations and worker compensation programs. In addition, all contractors are required to conduct construction and demolition activities in a manner that does not pose any risk to its workers or installation personnel. An industrial hygiene program addresses exposure to hazardous materials, use of personal protective equipment, and the availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable. ***Measure 2: Munitions, UXO, and CAIS Advisory.*** If any suspected military munitions, UXO, or CAIS related material is found during construction and demolition activities, work would stop in the area, personnel would move away from the site, and the Beale Explosive Ordnance Disposal (EOD) Flight would be contacted.
Utilities and Infrastructure (see **Section 3.8.4)**	***Measure 1: Coordination and Permits.*** As part of the Proposed Action, the contractor would coordinate with local utility companies and the Base Civil Engineering staff at Beale AFB prior to commencement of any construction or demolition activities to determine the estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably would be expected to be encountered during excavation and trenching activities associated with the Proposed Action. Any permits required for excavation and trenching would be obtained prior to the commencement of construction or demolition activities.

Environmental Resource	Environmental Protection Measures
Hazardous Materials and Wastes (see **Section 3.9.4**)	***Measure 1: Health and Safety Plan and ERP Waiver Coordination.*** Although there is a low likelihood for construction workers to be exposed to contamination from ERP sites during construction or demolition, it is recommended that a health and safety plan be prepared by the contractor in accordance with OSHA requirements prior to commencement of construction or demolition activities proximate to ERP sites. Should contamination be encountered, handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and Beale AFB programs and procedures. Workers at the ERP sites identified in this EA would either have OSHA 40-hour Hazardous Waste Operations and Emergency Response training, or a supervisor would have OSHA Site Supervisor certification. Current site-specific information about contamination, underground storage tank (UST) sites, and ERP infrastructure on and around each project site would be obtained prior to construction or demolition and site-specific health and safety plans would be prepared. Project planning would include protection of ERP infrastructure such as monitoring wells, treatment systems, and conveyance pipes to avoid disruption of clean-up activities. Prior to the start of any construction involving an ERP site, a waiver request must be submitted to Headquarters Air Combat Command and Air Force Center for Engineering and the Environment for approval.

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3. Affected Environment and Environmental Consequences

This section presents the characteristics of the affected environment and an analysis of the potential direct and indirect impacts each alternative would have on the affected environment. Cumulative and other effects are discussed in **Section 4**. All potentially relevant resource areas were initially considered in this EA. Some were eliminated from detailed examination because of their inapplicability to this proposal. General descriptions of the eliminated resources and the basis for elimination are described in **Section 1.3.2**.

3.1 Air Quality

3.1.1 Description of Resource

In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a given region or area is measured by the concentration of criteria pollutants in the atmosphere. The air quality in a region is a result of not only the types and quantities of atmospheric pollutants and pollutant sources in an area, but also surface topography, the size of the topological "air basin," and the prevailing meteorological conditions.

Under the CAA, the USEPA developed numerical concentration-based standards, or National Ambient Air Quality Standards (NAAQS), for pollutants that have been determined to affect human health and the environment. The NAAQS represent the maximum allowable concentrations for ozone (O_3) - measured as either volatile organic compounds (VOCs) or total NO_x, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur oxides (SO_x), respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter [PM_{10}] and particulate matter equal to or less than 2.5 microns in diameter [$PM_{2.5}$]), and lead (Pb) (40 CFR Part 50). The CAA also gives the authority to states to establish air quality rules and regulations. The State of California has adopted the NAAQS and promulgated additional California Ambient Air Quality Standards (CAAQS) for criteria pollutants. The CAAQS are more stringent than the Federal primary standards. **Table 3-1** presents the USEPA NAAQS and CAAQS.

USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. Areas within each AQCR are therefore designated as either "attainment," "nonattainment," "maintenance," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS; nonattainment indicates that criteria pollutant levels exceed NAAQS; maintenance indicates that an area was previously designated nonattainment but is now attainment; and an unclassified air quality designation by USEPA means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment. USEPA has delegated the authority for ensuring compliance with the NAAQS to the California Air Resources Board (CARB). CARB has delegated responsibility for implementation of the Federal CAA and California CAA to local air pollution control agencies. In accordance with the CAA, each state must develop a State Implementation Plan (SIP), which is a compilation of regulations, strategies, schedules, and enforcement actions designed to move the state into compliance with all NAAQS.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. The General Conformity Rule applies only to regionally significant actions in nonattainment or maintenance areas.

Table 3-1. National and State Ambient Air Quality Standards

Pollutant	Averaging Time	Standard Value		Federal Standard Type
		Federal	State	
CO	8-hour [a]	9 ppm (10 mg/m^3)	Same	Primary
	1-hour [a]	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)	Primary
NO_2	Annual Arithmetic Mean	0.053 ppm (100 µg/m^3)	0.030 ppm (57 µg/m^3)	Primary and Secondary
	1-hour	--	0.18 ppm (339 µg/m^3)	None
O_3	8-hour [b]	0.075 ppm (147 µg/m^3)	0.070 ppm (137 µg/m^3)	Primary and Secondary
	1-hour [c]	--	0.09 ppm (180 µg/m^3)	Primary and Secondary
Pb	Quarterly average	1.5 µg/m^3	--	Primary and Secondary
	30-Day	--	1.5 µg/m^3	
PM_{10}	Annual Arithmetic Mean	--	20 µg/m^3	
	24-hour	150 µg/m^3 [d]	50 µg/m^3	Primary and Secondary
$PM_{2.5}$	Annual Arithmetic Mean [e]	15 µg/m^3	12 µg/m^3	Primary and Secondary
	24-hour [f]	35 µg/m^3	Same	Primary and Secondary
SO_2	Annual Arithmetic Mean	0.030 ppm	--	Primary
	24-hour [a]	0.14 ppm	0.04 ppm	Primary
	3-hour [a]	0.5 ppm (1,300 µg/m^3)	--	Secondary
	1-hour	--	0.25 ppm--	None
Visibility Reducing Particles	8-hour	0.23 per km[g]	--	None
Sulfates	24-hour	25 µg/m^3	--	None
Hydrogen Sulfide	1-hour	0.03 ppm	--	None
Vinyl Chloride	24-hour	0.01 ppm	--	None

Sources: USEPA 2008 and CARB 2008

Notes: Parenthetical values are approximate equivalent concentrations.

a. Not to be exceeded more than once per year.
b. To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. This standard is effective on May 27, 2008, and replaces the 1997 8-hour ozone standard of 0.08 ppm. However, the 1997 standard and its implementing rules remain in effect while USEPA undergoes rulemaking to transition to the 2008 standard.
c. As of June 15, 2005, USEPA revoked the Federal 1-hour ozone standard in all areas except the 14 8-hour ozone nonattainment Early Action Compact Areas.
d. Not to be exceeded more than once per year on average over 3 years.
e. To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0 µg/m^3.
f. To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3. This standard is effective December 17, 2006.
g. Extinction coefficient of 0.23 per kilometer – visibility of 10 miles or more due to particles when relative humidity is < 70%.

Key: ppm = parts per million; mg/m^3 = milligrams per cubic meter; µg/m^3 = micrograms per cubic meter; km = kilometer

Federal Prevention of Significant Deterioration (PSD) regulations also define air pollutant emissions from proposed major stationary sources or modifications to be "significant" if (1) a proposed project is within 10 kilometers of any Class I area, and (2) regulated pollutant emissions would cause an increase in the 24-hour average concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more (40 CFR 52.21[b][23][iii]). A Class I area includes national parks larger than 6,000 acres, national wilderness areas and national memorial parks larger than 5,000 acres, and international parks. PSD regulations also define ambient air increments, limiting the allowable increases to any area's baseline air contaminant concentrations, based on the area's Class designation (40 CFR 52.21[c]). According to 40 CFR Part 81, no Class I areas are located in the vicinity of Beale AFB. Therefore, Federal PSD regulations would not apply to the Proposed Action (USEPA 2009b).

On March 10, 2009, the USEPA issued a proposed rule for mandatory greenhouse gas (GHG) reporting from large GHG emissions sources in the United States. The proposed rule was published in the *Federal Register* on April 10, 2009. The purpose of the rule is to collect comprehensive and accurate data on carbon dioxide (CO_2) and other GHG emissions that would be used to inform future policy decisions. The proposed rule would require reporting of greenhouse gases including CO_2. Although GHGs are not currently regulated under the CAA, the USEPA has clearly indicated that GHG emissions and climate change are issues that need to be considered in future planning. GHGs are produced by the burning of fossil fuels and through industrial and biological processes.

Title V of the CAA Amendments of 1990 requires states and local agencies to permit major stationary sources. A major stationary source has the potential to emit more than 100 tons per year (tpy) of any one criteria air pollutant, 10 tpy of a hazardous air pollutant (HAP), or 25 tpy of any combination of HAPs. The purpose of the permitting rule is to establish regulatory control over large, industrial-type activities and monitor their impact on air quality. Section 112 of the CAA defines the sources and kinds of HAPs.

3.1.2 Description of Affected Environment

Beale AFB is in Yuba County, which is within the Sacramento Valley Intrastate (SVI) AQCR. The Proposed Action is in the FRAQMD and is subject to rules and regulations developed by the FRAQMD. The FRAQMD is responsible for implementing and enforcing state and Federal air quality regulations in Yuba County, Sutter County, and portions of the Northern Sacramento Valley Air Basin. The air quality in Yuba County has been characterized by the USEPA as unclassified/attainment for all criteria pollutants (USEPA 2009a). However, CARB has designated Yuba county as a nonattainment area for 8-hour O_3 and PM_{10} (CARB 2007).

3.1.3 Environmental Consequences

3.1.3.1 Evaluation Criteria

The environmental consequences to local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS "attainment" areas would be considered significant if the net increases in pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard. Although not applicable to Federal actions, significance thresholds as defined by FRAQMD guidelines are compared to the Proposed Action as a frame of reference. Significance thresholds for FRAQMD are shown below in **Table 3-2**.

- Expose sensitive receptors to substantially increased pollutant concentrations.
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory.
- Exceed any Evaluation Criteria established by a SIP.

Table 3-2. FRAQMD Significance Thresholds

Project Type	Ozone Precursor Emissions		Respirable Particulate Matter Emissions
	NO_x (pounds per day)	ROG (pounds per day)	PM_{10} (pounds per day)
All	25	25	80

Source: FRAQMD 2009

Key:

NO_x = nitrogen oxides

ROG = reactive organic gases

PM_{10} = respirable particulate matter (including particulate matter equal to or less than 10 microns in diameter)

In addition to the *de minimis* emissions thresholds, Federal PSD regulations define air pollutant emissions to be significant if the source is within 10 kilometers of any Class I area, and emissions would cause an increase in the concentration of any regulated pollutant in the Class I area of 1 $\mu g/m^3$ or more (40 CFR 52.21[b][23][iii]).

3.1.3.2 Proposed Action

The Proposed Action would have short-term, minor, adverse impacts on air quality. **Table 3-3** summarizes the annual estimated air quality emissions from construction, demolition, and operational activities. The estimated emissions from the Proposed Action would represent a minor percentage of the air emissions inventory locally in Yuba County and would represent a negligible percentage of the air emissions inventory regionally within the SVI AQCR.

Table 3-3. Annual Estimated Air Emissions Resulting from the Proposed Action

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy
2010 Construction Emissions	*1.07*	*0.21*	*1.01*	*0.00*	*0.18*	*0.09*
Percent of SVI AQCR Inventory	0.001%	0.0003%	0.0003%	0.000%	0.0003%	0.0005%
2011 Construction Emissions	*2.40*	*1.09*	*2.16*	*0.00*	*0.58*	*0.24*
Percent of SVI AQCR Inventory	0.003%	0.002%	0.001%	0.000%	0.001%	0.001%
Total Operational Emissions in 2012 and Beyond	**0.193**	**0.011**	**0.162**	**0.0012**	**0.015**	**0.015**
Percent of SVI AQCR Inventory	0.0002%	0.0002%	0.00005%	0.00001%	0.00003%	0.0001%

Note: Annual emissions reported are unmitigated. URBEMIS estimates emissions of reactive organic gas (ROG). Emissions of ROG are assumed to equal VOC emissions.

Since Beale AFB is located in an unclassified/attainment area for criteria pollutants identified by the USEPA, no formal conformity analysis is required. Emissions for the construction activities in the Proposed Action and Alternative 1 were calculated using the Urban Emissions Model (URBEMIS), which is used in California to evaluate the air quality impacts of land development projects. URBEMIS is approved by the FRAQMD. URBEMIS2007 Version 9.2.4 was run primarily in default mode as described in the URBEMIS2007, Version 9.2 User's Guide. For paving, rather than using the default of 25 percent of the total building project acreage, which underestimates the paved area, the actual proposed paved area was entered into URBEMIS. In addition to the URBEMIS default equipment used during the construction phase of the project, it was assumed that two 49 brake-horsepower diesel generator sets would be used 8 hours per day. For construction conservation measures, the most conservative conservation measure in URBEMIS was chosen although actual conservation measures may be more stringent and result in lower emissions.

Daily construction emissions estimated using URBEMIS2007 are presented in **Table 3-4**. Emissions estimated with construction conservation measures in URBEMIS are below the FRAQMD significance thresholds for all regulated pollutants with the exception of NO_x in 2011. Emissions in 2010 estimated without URBEMIS conservation measures exceed the FRAQMD significance threshold for NO_x. Emissions in 2011 estimated without conservation measures exceed the FRAQMD significance thresholds for NO_x and VOC (ROG). The most conservative conservation measure in URBEMIS was chosen although actual conservation measures may be more stringent and result in lower emissions. Although the Proposed Action's daily NO_x emission rate in 2011 exceeds the FRAQMD threshold, emissions would be temporary in nature and would only be slightly higher than the FRAQMD significance thresholds.

Table 3-4. Daily Construction Emissions Resulting from the Proposed Action for Comparison to FRAQMD Significance Thresholds

Activity	NO_x lbs/day	VOC lbs/day	CO lbs/day	SO_2 lbs/day	PM_{10} lbs/day	$PM_{2.5}$ lbs/day
2010 Construction Emissions Conservation Measures Not Employed	*25.08*	*3.41*	*16.19*	*0.02*	*15.26*	*4.08*
2010 Construction Emissions Including Conservation Measures	*21.33*	*3.41*	*16.19*	*0.02*	*13.43*	*3.17*
Feather River AQMD Significance Threshold	**25**	**25**	**--**	**--**	**80**	**--**
2011 Construction Emissions Conservation Measures Not Employed	*30.22*	*25.61*	*27.65*	*0.02*	*19.84*	*4.92*
2011 Construction Emissions Including Conservation Measures	*26.76*	*23.64*	*27.65*	*0.02*	*19.37*	*4.49*
Feather River AQMD Significance Threshold	**25**	**25**	**--**	**--**	**80**	**--**

Note: URBEMIS estimates emissions of reactive organic gas (ROG). Emissions of ROG are assumed to equal VOC emissions.

Construction and Demolition Emissions. Emissions from construction and demolition activities associated with the Proposed Action would have short-term, minor, adverse impacts on local air quality and would have negligible impacts on regional air quality. Implementation of the Proposed Action would not result in violations of any ambient air quality standards. The construction of the Fitness Center and

demolition of existing facilities as described in **Section 2.1** would generate air pollutant emissions because of grading, filling, compacting, trenching, and operation of construction equipment and generators. Construction activities would also generate total suspended particulate and PM_{10} emissions as fugitive dust from ground-disturbing activities (e.g., grading, trenching, soil piles) and from combustion of fuels in construction equipment. Fugitive dust emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions. The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. Construction activities would incorporate BMPs and Environmental Protection Measures (see **Section 3.1.4** and **Table 2-2**) to minimize fugitive particulate matter emissions. Additionally, construction workers commuting daily to and from the construction site in their personal vehicles would result in criteria pollutant emissions. All portable construction equipment larger than 50 brake-horse-power would be registered in the CARB Portable Equipment Registration Program prior to commencing construction activities. **Appendix C** contains detailed calculations and the assumptions used to estimate the air quality emissions from construction activities.

Operational and Area Source Emissions. Building 2422 (swimming pool) operates a 1.6 million British thermal units per hour natural gas heater. This stationary source has a FRAQMD Permit No. P9005. Actual and permitted hours of operation and emissions for this stationary source are shown in **Table 3-5** (BAFB 2005b).

Table 3-5. Permitted and Actual Emissions from Natural Gas Heater Located at Building 2422

Calendar Year	Permitted/ Actual Hours	NO_x lbs	VOC lbs	CO lbs	SO_2 lbs	PM_{10} lbs	$PM_{2.5}$ lbs
Permitted Limit	2,432	386.80	21.27	324.92	2.32	29.40	29.40
2008	19	3.02	0.17	2.54	0.02	0.23	0.23
2007	2	0.32	0.02	0.27	0.00	0.02	0.02
2006	1,387	220.60	12.13	185.30	1.32	16.77	16.77
2005	1,367	217.42	11.96	182.63	1.30	16.52	16.52

Source: BAFB 2005b

It is assumed that after the proposed Fitness Center is constructed a similar swimming pool heater would be used. Therefore, operational emissions are based on potential to emit emissions from FRAQMD Permit P9005 (see **Tables 3-3** and **3-4**). An Authority to Construct (ATC) permit from FRAQMD would be required for removal of the existing stationary source at Building 2422 and for any new stationary source at the proposed Fitness Center. All FRAQMD ATC permits would be obtained prior to construction of the proposed Fitness Center.

Indirect emissions would result from the operation of privately-owned vehicles (POVs) accessing the Fitness Center facility. No new personnel would be arriving at Beale AFB as part of the Proposed Action. Personnel using the current HAWC, fitness center and swimming pool would commute to the proposed Fitness Center once this facility becomes operational. Therefore, no net increase in POV emissions would result from implementation of the Proposed Action.

Other operational and area source emissions would result from natural gas combustion from boilers to heat the proposed Fitness Center facility and emissions from landscaping activities. The facilities scheduled for demolition currently are heated and have regularly scheduled landscaping activities. After

implementation of the Proposed Action, the total square footage requiring heating would decrease from 77,381 ft^2 to 60,794 ft^2. In addition, there would be no net increase in operational emissions from landscaping activities since landscaping activities would be offset by the demolition of existing facilities once the proposed Fitness Center becomes operational. Therefore, emissions from the Proposed Action would be slightly less than ongoing heating and landscaping emissions at the current facilities scheduled for demolition.

Greenhouse Gas Emissions. The Proposed Action would contribute directly to emissions of greenhouse gases from the combustion of fossil fuels from construction equipment. CO_2 accounts for 92 percent of all greenhouse gas emissions; electric utilities are the primary source of anthropogenic CO_2, followed by transportation. The California Energy Commission estimates that in 2004, gross CO_2 emissions in California were 492 million metric tons of CO_2 equivalents (CEC 2006). Construction and demolition activities associated with the Proposed Action would emit 117 metric tons of CO_2 in 2010 and 284 metric tons of CO_2 in 2011. CO_2 emissions from the Proposed Action would be 0.00002 percent in 2010 and 0.00006 percent in 2011 of the California state CO_2 emissions respectively. Therefore, the Proposed Action would have negligible contribution towards statewide greenhouse gas inventories.

Summary. As shown in **Tables 3-3** to **3-5**, air quality emissions from the Proposed Action would be minor, would be less than 10 percent of the emissions inventory for SVI AQCR, and are below FRAQMD significance thresholds when employing FRAQMD conservation measures with the exception of NO_x emission rates in 2011. There would be a negligible, adverse impact on local or regional air quality from implementation of the Proposed Action. Therefore, a conformity determination in accordance with 40 CFR 93-153(1) is not required, as the total of direct and indirect emissions from the Proposed Action would not be regionally significant (e.g., the emissions are not greater than 10 percent of the SVI AQCR emissions inventory). **Appendix C** contains detailed calculations and the assumptions used to estimate the air quality emissions from the Proposed Action's construction, demolition, and operational activities.

3.1.3.3 Alternative 1

Alternative 1 would have short-term minor adverse impacts on air quality. **Table 3-6** summarizes the estimated air quality emissions from construction, demolition, and operational activities. The estimated emissions from Alternative 1 would represent a minor percentage of the air emissions inventory locally in Yuba County and would represent a negligible percentage of the air emissions inventory regionally within the SVI AQCR.

Daily construction emissions estimated using URBEMIS2007 are presented in **Table 3-7**. Emissions estimated with construction conservation measures in URBEMIS are below the FRAQMD significance thresholds for all regulated pollutants with the exception of NO_x in 2011. Emissions in 2010 estimated without URBEMIS conservation measures exceed the FRAQMD significance threshold for NO_x. Emissions in 2011 estimated without conservation measures exceed the FRAQMD significance thresholds for NO_x and VOC (ROG). The most conservative conservation measure in URBEMIS was chosen although actual conservation measures may be more stringent and result in lower emissions. Although Alternative 1's daily NO_x emission rate in 2011 exceeds the FRAQMD threshold, emissions would be temporary in nature and would only be slightly higher than the FRAQMD significance thresholds.

Construction and Demolition Emissions. Emission impacts from construction and demolition activities associated with Alternative 1 would be similar to the Proposed Action. Construction and demolition activities would have no adverse impact to local or regional air quality. **Appendix C** contains detailed calculations and the assumptions used to estimate the air quality emissions from Alternative 1.

Table 3-6. Annual Estimated Air Emissions Resulting from Alternative 1

Activity	NO_x tpy	VOC tpy	CO tpy	SO_2 tpy	PM_{10} tpy	$PM_{2.5}$ tpy
2010 Construction Emissions	*1.09*	*0.22*	*1.03*	*0.00*	*0.18*	*0.09*
Percent of SVI AQCR Inventory	0.001%	0.0003%	0.0003%	0.000%	0.0003%	0.0005%
2011 Construction Emissions	*2.41*	*1.10*	*2.16*	*0.00*	*0.58*	*0.24*
Percent of SVI AQCR Inventory	0.003%	0.002%	0.001%	0.000%	0.001%	0.001%
Total Operational Emissions in 2012 and Beyond	**0.193**	**0.011**	**0.162**	**0.0012**	**0.015**	**0.015**
Percent of SVI AQCR Inventory	0.0002%	0.00002%	0.00005%	0.00001%	0.00003%	0.0001%

Note: Annual emissions reported are unmitigated. URBEMIS estimates emissions of reactive organic gas (ROG). Emissions of ROG are assumed to equal VOC emissions.

Table 3-7. Daily Construction Emissions Resulting from Alternative 1 for Comparison to FRAQMD Significance Thresholds

Activity	NO_x lbs/day	VOC lbs/day	CO lbs/day	SO_2 lbs/day	PM_{10} lbs/day	$PM_{2.5}$ lbs/day
2010 Construction Emissions Conservation Measures Not Employed	*25.08*	*3.41*	*16.19*	*0.02*	*15.26*	*4.08*
2010 Construction Emissions Including Conservation Measures	*21.33*	*3.41*	*16.19*	*0.02*	*13.43*	*3.17*
Feather River AQMD Significance Threshold	**25**	**25**	**--**	**--**	**80**	**--**
2011 Construction Emissions Conservation Measures Not Employed	*30.34*	*25.67*	*27.69*	*0.02*	*19.84*	*4.92*
2011 Construction Emissions Including Conservation Measures	*26.59*	*23.69*	*27.69*	*0.02*	*19.37*	*4.49*
Feather River AQMD Significance Threshold	**25**	**25**	**--**	**--**	**80**	**--**

Note: URBEMIS estimates emissions of reactive organic gas (ROG). Emissions of ROG are assumed to equal VOC emissions.

Operational and Area Source Emissions. Operational and area source emission impacts associated with Alternative 1 would be similar to the Proposed Action. Emissions from the natural gas heater required to heat the proposed swimming pool are shown in **Table 3-5**. In addition, indirect POV emissions, boiler operations, and landscaping area source emission impacts would be offset similar to the Proposed Action.

Greenhouse Gas Emissions. Construction and demolition activities associated with Alternative 1 would emit 117 metric tons of CO_2 in 2010 and 284 metric tons of CO_2 in 2011. CO_2 emissions from Alternative 1 would be 0.00002 percent in 2010 and 0.00006 percent in 2011 of the California state CO_2 emissions respectively. Therefore, Alternative 1 would have a negligible contribution towards statewide greenhouse gas inventories.

Summary. As shown in **Table 3-6** and **Table 3-7**, air quality emissions from the Alternative 1 would be minor, would be less than 10 percent of the emissions inventory for SVI AQCR, and would be below FRAQMD significance thresholds when employing FRAQMD conservation measures with the exception of NO_x emission rates in 2011. There would be a negligible, adverse impact on local or regional air quality from implementation of Alternative 1. Therefore, a conformity determination in accordance with 40 CFR 93-153(1) is not required, as the total of direct and indirect emissions from Alternative 1 would not be regionally significant (e.g., the emissions are not greater than 10 percent of the SVI AQCR emissions inventory). **Appendix C** contains detailed calculations and the assumptions used to estimate the air quality emissions from Alternative 1's construction, demolition, and operational activities.

3.1.3.4 No Action Alternative

Under the No Action Alternative, Beale AFB would not construct the proposed Fitness Center, which would result in the continuation of the existing condition, as described in **Section 2.2.2**. Therefore, no direct or indirect adverse impacts would be expected on local or regional air quality from implementation of the No Action Alternative.

3.1.4 Environmental Protection Measures

Measure 1: Fugitive Dust Control. Contractors would be required to follow FRAQMD fugitive dust control measures, such as wind breaks and barriers, frequent water applications, application of soil additives, control of vehicle access, vehicle speed restrictions, covering of piles, use of gravel at site exit points, washing of equipment at the end of each work day and prior to site removal, and work stoppage.

The environmental protection measures used in the URBEMIS model for fugitive dust control include the following for fine and mass grading:

- Soil stabilizing measures such as replacing ground cover in disturbed areas as quick as possible; watering exposed surfaces two times daily; and equipment loading/unloading
- Unpaved roads measures to include managing haul road dust by watering these roads two times daily.

Measure 2: Construction Equipment Emission Controls. Construction equipment exhaust emissions would not exceed FRAQMD Regulation II, Rule 3.0, *Visible Emissions* limitations (40 percent opacity or Ringlemann 2.0). All construction equipment would be properly tuned and maintained prior to and for the duration of the Proposed Action. In addition, construction equipment and vehicles would reduce idling times to 5 minutes or less when possible.

The environmental protection measures used in the URBEMIS model for construction equipment emission controls include the following for demolition, grading, trenching, paving, and building construction:

- Construction equipment would use diesel particulate filters
- Construction equipment would use diesel oxidation catalysts.

Measure 3: Power Sources. The Proposed Action would utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.

3.2 Geological Resources

3.2.1 Description of Resource

Geological resources consist of the earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of geology and soils. Geology is the study of the earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from field analysis based on observations of the surface and borings to identify subsurface composition.

Soils are the unconsolidated materials overlying bedrock and other parent material. Soil depth, structure, elasticity, strength, shrink-swell potential, and erodibility determine a soil's ability to support man-made structures and facilities. Soils typically are described in terms of their series or association, slope, physical characteristics, and relative compatibility or constraints with respect to particular construction activities and types of land use.

3.2.2 Description of Affected Environment

Beale AFB is on the boundary between the Great Valley and Sierra Nevada Geologic Provinces. The Great Valley Province was formed as a basin between the Coast Range Province on the west and the Sierra Nevada Province on the east. The basin has filled with alluvial deposits from the erosion of the Sierra Nevada and the Coast Range Provinces. Because of its location on the boundary of the two provinces, Beale AFB contains characteristics of both the Great Valley and the Sierra Nevada. Four geomorphic units of the Great Valley Province cover most of Beale AFB: river floodplains and channels of the Modesto Formation, low alluvial plains and fans of the Riverbank Formation, and the two dissected uplands of the Mehrten and Laguna Formations. A fifth geomorphic unit, metavolcanic rock, occurs in the eastern portion of the installation and is characteristic of the Sierra Nevada foothills (BAFB 2008c).

There are ten soil series found on Beale AFB: Auburn loam, Argonaut-Auburn loams, Auburn-Sobrante loams, Auburn-Sobrante-rock outcrop complex, Conejo loam, Pardee gravelly loam, Pardee-Rancho Seco complex, Perkins loam, Redding-Corning complex, and San Joaquin loam (NRCS 2009). These soils were grouped by the Natural Resources Conservation Service according to their topographic position and drainage characteristics. The proposed project site is located on previously disturbed soils within the Redding-Corning complex and the San Joaquin loam. The buildings planned for demolition are located within the Redding-Corning complex. The Redding-Corning complex soil series consists of moderately deep and well-drained soils that form on old alluvial terraces at elevations of 110 to 250 feet above mean sea level (amsl). Redding-Corning complex soils are moderately permeable and runoff is slow. The San Joaquin loam series consists of moderately deep, moderately well drained soils that form on old alluvial terraces at elevations of 60 to 130 feet amsl. The infiltration rate for the San Joaquin loam is moderate and runoff is slow (BAFB 2005c).

3.2.3 Environmental Consequences

3.2.3.1 Evaluation Criteria

Analysis of potential impacts on geological resources typically includes identification and description of resources that could potentially be affected, examination of a proposed action and the potential effects this

action could have on the resource, assessment of the significance of potential impacts, and, provision of mitigation measures in the event potentially significant impacts are identified. Impacts on geology and soils would be significant if they changed the soil composition, structure, or function within the environment.

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating environmental consequences of a proposed action on geological resources. Generally, impacts would be avoided or minimized with proper construction techniques, erosion-control measures, and structural engineering design incorporated into project development.

3.2.3.2 Proposed Action

Short-term, minor, adverse impacts on geology and soils would be anticipated due to construction and demolition activities, such as grading, excavation, and recontouring of the soil. Implementation of BMPs and Environmental Protection Measures during construction and demolition activities would limit adverse impacts on geology and soils (see **Section 3.2.4** and **Table 2-2**). Therefore, no long-term, adverse direct or indirect impacts on soils, regional or local topography, or physiographic features at the installation are anticipated.

3.2.3.3 Alternative 1

Short-term, minor, adverse impacts on geology and soils would be anticipated due to construction and demolition activities, such as grading, excavation, and recontouring of the soil. Implementation of BMPs and Environmental Protection Measures during construction and demolition activities would limit adverse impacts on geology and soils (see **Section 3.2.4** and **Table 2-2**). Therefore, no long-term, adverse direct or indirect impacts on soils, regional or local topography, or physiographic features at the installation are anticipated.

3.2.3.4 No Action Alternative

Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation; therefore, there would be no change in or impacts on geological resources.

3.2.4 Environmental Protection Measures

Measure 1: Best Management Practices (BMPs). Fugitive dust from construction and demolition activities would be minimized by BMPs such as watering and soil stockpiling, thereby reducing to negligible levels the total amount of soil exposed. In addition, standard erosion-control means (e.g., silt fencing, sediment traps, application of water sprays, and revegetation at disturbed areas) would also reduce environmental consequences related to those activities.

3.3 Water Resources

3.3.1 Description of Resource

Surface Water. Surface water resources consist of lakes, rivers, and streams. Surface water is important for its contributions to the economic, ecological, recreational, and human health of a community or locale.

Groundwater. Groundwater typically can be described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Floodplains. Floodplains are areas of low-level ground present along a river or stream channel. Federal, state, and local regulations often limit floodplain development to passive uses such as recreation and preservation activities to reduce the risks to human health and safety (BAFB 2008c).

Jurisdictional Waters of the United States and Wetlands. Jurisdictional waters of the United States are areas that convey water, exhibit an "ordinary high water mark," and do not meet the three parameter criteria for wetlands. An ordinary high water mark is defined as the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of the soil, destruction of terrestrial vegetation, or the presence of litter and debris (33 CFR 328.3). The USACE recognizes three distinct types of drainage features: ephemeral drainages, intermittent drainages, and perennial drainages. Ephemeral drainages are fed primarily by storm water. They convey flows during and immediately after storm events; however, they might stop flowing or begin to dry if the interval between storms is sufficiently long. Under recent United States Supreme Court rulings, ephemeral drainages must also show a significant nexus to navigable waters for it to be considered jurisdictional. Intermittent drainages are fed primarily by groundwater and supplemented by storm water. After the onset of rains they should have persistent flows throughout and past the end of the rainy season. Eventually, depending on the availability of groundwater, these features become dry. Perennial drainages are fed predominantly by groundwater and supplemented by storm water. Flows in these systems persist throughout the year (BAFB 2008c). Additionally, on Beale AFB there are artificial drainages which are ditches or canals that were excavated in upland areas to convey water.

Wetlands are areas that are transitional between aquatic habitats and upland habitats, and in some cases are considered jurisdictional waters of the United States. The USACE and the USEPA jointly define wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Wetlands are subject to USACE regulation if they meet requirements based on adjacency to navigable waters of the United States or nonnavigable tributaries to waters of the United States, or are proven to have a "significant nexus" to waters of the United States Permanent wetlands and seasonal wetlands are the two primary wetland types that occur at Beale AFB. Seasonal wetlands on Beale AFB are further classified into four types: vernal pools, swales, disturbed wetlands, and other seasonal wetlands. Descriptions of the seasonal wetlands found on Beale AFB from Supporting Information for the Threatened and Endangered Species Work Plan (BAFB 2005d) are summarized below.

Vernal Pools. Vernal pools are topographic depressions with impervious claypan, hardpan, or bedrock bottoms that fill with water in the winter-spring rainy season and then dry completely by early summer. Surface water ponds in these depressions because they lack external drainage; water infiltration is slow to nonexistent due to underlying impervious soil layers; and the water table, which is perched on the shallow impervious soil layers, becomes exposed in the depressions after soils become saturated. The length of time that vernal pools are ponded varies from several days to the entire length of the wet season.

Swales. Swales include both shallow drainages and open flats, which typically convey surface runoff during and immediately after storms. Some surface runoff collects in these swales, wetting and saturating the soil for extended periods. The primary distinction between swales and other seasonal wetlands, such as vernal pools, is that water ponds in the latter, while the former are inundated for short periods during

and immediately after rainfall as water drains. Swales often drain between vernal pools and into ephemeral and intermittent drainages.

Other Seasonal Wetlands. Other seasonal wetlands are wet areas other than swales and vernal pools. They occur within the annual grassland matrix in shallow depressions underlain by slowly permeable soils or at the fringes of permanent wetlands. Seasonal wetlands are differentiated from vernal pools and swales by plant composition, duration of ponding, and landform position. However, some of the special-status species with potential to occur in vernal pools and swales can occasionally be encountered in other seasonal wetlands as well.

Disturbed Wetlands. Disturbed wetlands are typically seasonally wet areas that might have supported vernal pools or swales at one time but now lack these features because of land leveling or grading. Depending on the degree of disturbance, their vegetative cover might be characterized by a mixture of species described for other seasonal wetlands or they might be mostly devoid of vegetation. Disturbed wetlands often have diffuse boundaries that are difficult to determine. Areas mapped as disturbed wetland can contain patches of upland vegetation where disturbance has resulted in a modification of the original wetland hydrology.

3.3.2 Description of Affected Environment

Information in this section is based on site visits in February and March 2009, the Beale AFB INRMP (BAFB 2008c), Light Detection and Ranging (LiDAR) data provided by the Base Environmental Office, other environmental documents completed for Beale AFB, and the Biological Survey Report (see **Appendix D**) for this EA (e^2M 2009).

At Beale AFB all water features shown on LiDAR data (including drainages, swales, wetlands) are considered to be under the USACE's jurisdiction unless there is a field verification showing they do not exist. Even though some jurisdictional waters of the United States and wetlands might appear to be isolated, they are still considered jurisdictional.

Surface Water. There are several lakes and small impoundments on Beale AFB. Three major drainage channels (Dry, Hutchinson, and Reeds creeks), which are located outside of the proposed project site, serve as the principal surface drainage system on Beale AFB. These creeks cross the installation in a generally northeast-to-southwest direction (BAFB 2008c).

Groundwater. Groundwater at Beale AFB belonging to the Central Valley groundwater basin is found 300 to 500 feet below ground surface and is presumed to originate in unconfined aquifer materials with local clay/silt lenses overlying the Central Valley groundwater basin. Groundwater in the northern portion of Beale AFB receives recharge from the Yuba River drainage basin and generally has the highest quality at the installation, with low levels of total dissolved solids, nitrates, and sulfates. Groundwater in the central portion of the installation has higher levels of total dissolved solids and groundwater at the southern end of the installation receives recharge from Dry Creek and Bear River and has quality between that of the north and central regions. Groundwater at Beale AFB is generally first encountered within approximately 4 to 100 feet below ground surface at monitoring wells throughout the installation. Groundwater has been impacted by former installation activities and is monitored and sampled under the ERP. Groundwater generally flows west to southwest across the installation. Water for domestic use at Beale AFB is provided from nine deep wells on the installation. Total water use at the installation varies from 2.5 to 6.0 million gallons per day. The wells have a total combined pumping capacity of 5.0 million gallons per day (BAFB 2008c).

Floodplains. Creeks at Beale AFB are surrounded by wide floodplain areas created by the occasional heavy rainfall that occurs in the region, impervious soil conditions, and lack of topographic relief. There are two types of floodplains: (1) the 100-year floodplain has a 1 percent chance of flooding in any given year and (2) the 500-year floodplain has a 0.2 percent chance of flooding in any given year (BAFB 2008c). The proposed project site is outside of the 100- and 500-year floodplains on Beale AFB.

Jurisdictional Waters of the United States. Most of the drainages and wetlands at Beale AFB are considered jurisdictional by the USACE (Evans 2009). Based upon the USACE field verification, the proposed project site contains nine areas with waters of the United States in three distinct drainages (see **Figure 3-1**). There are no wetlands on the proposed project site. Jurisdictional waters of the United States that would be affected by the Proposed Action are extremely degraded and have very low functionality. These jurisdictional areas appear to be man-made in the past and only serve the function of draining the proposed project site and adjacent developed areas (e²M 2009). They were described as ditches by the USACE field verification.

Potential jurisdictional drainages, pools, and ephemeral wetlands identified within or adjacent to the proposed project site were evaluated using site visits, existing Beale AFB delineations, and LiDAR data. Portions of the proposed project site are located in or near jurisdictional waters of the United States, all of which are degraded and have a very low functionality. During biological surveys of the proposed project area, it was determined that none of the ponding water features qualified as vernal pools based on plant composition, landform position, period of inundation, and the history of previous land modification. These disturbed seasonal drainages are man-made upland drainage ditches that were formed by grading activities that created depressions (e²M 2009). **Table 3-8** presents the acreages of the jurisdictional waters of the United States at the proposed project site that would be impacted through implementation of the Proposed Action.

Table 3-8. Acreages of Waters of the United States at the Proposed Project Site

Waters of the United States	Estimated Acreages
Ditch A	0.06
Ditch B	0.13
Ditch C	0.05
Ditch D	0.04
Ditch E	0.05
Ditch F	0.04
Ditch G	0.01
Ditch H	0.01
Ditch I	0.01
Ditch J	0.01
TOTAL	**0.41**

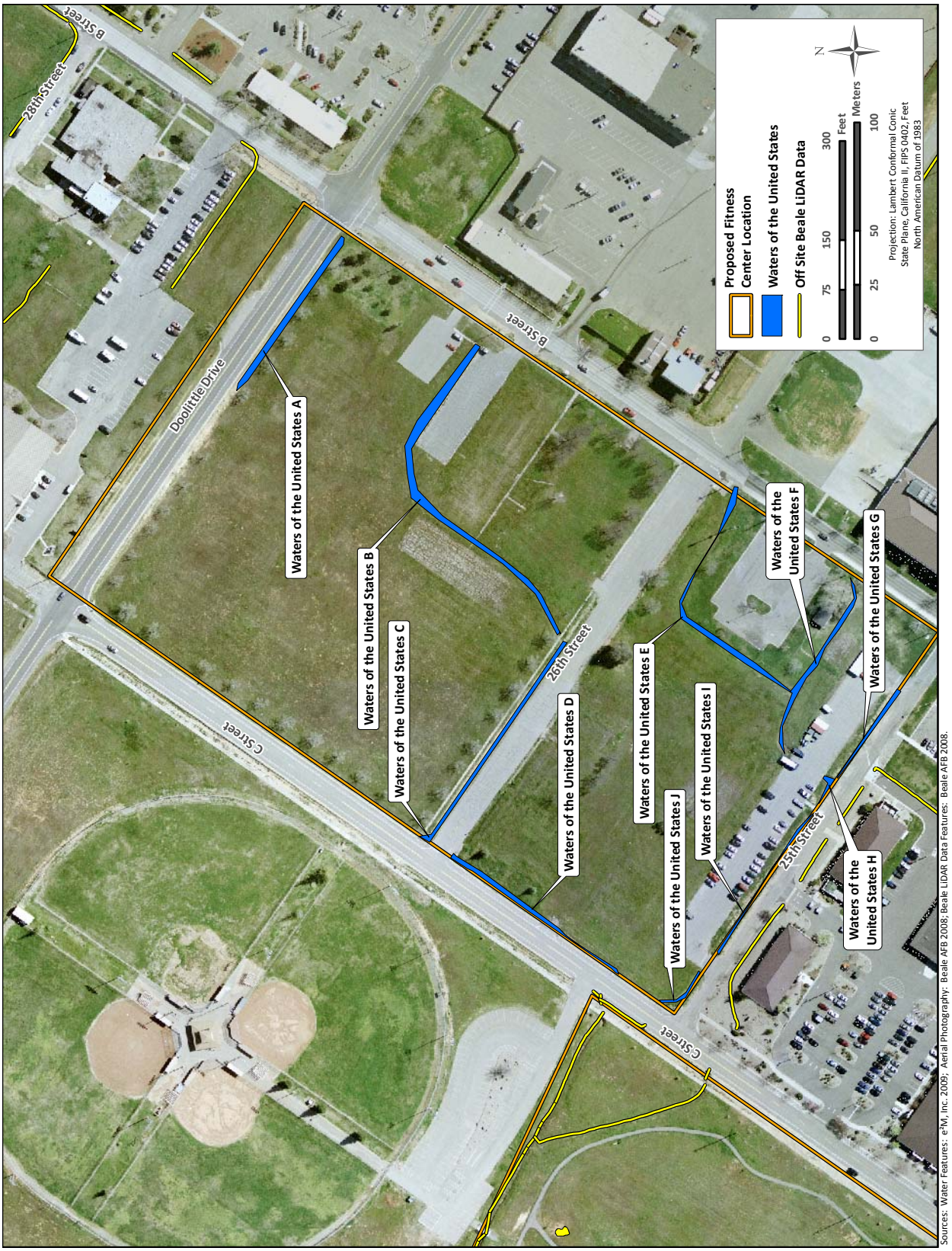

Figure 3-1. Water Features in the Vicinity of the Proposed Fitness Center Location

3.3.3 Environmental Consequences

3.3.3.1 Evaluation Criteria

Evaluation criteria for impacts on water resources are based on availability, quality, and use of water in or near the proposed project site. An impact on water resources would be significant if it were to affect water availability to existing users, contribute to overdraft of groundwater basins, exceed safe annual yield of water supply sources, adversely affect water quality or endanger public health, threaten or damage unique hydrologic characteristics, or violate established laws or regulations that have been adopted to protect or manage water resources of an area.

Jurisdictional waters of the United States are regulated by the USACE and include wetlands and vernal pools. Three primary criteria were used to define potential vernal pools in the project area during biological surveys of the proposed project site: (1) presence of a basin, (2) presence of ponded water (for this assessment, water was considered ponded if it were present 14 days after the last rain event), and (3) presence of vernal pool flora or fauna. A secondary criterion of disturbance was also considered when determining the status of some vernal pools. Vernal pools occupying a defined basin with water present 14 days after a rain event and containing vernal pool flora or fauna were considered vernal pools. If two of the criteria were present then generally it was considered a disturbed or dry vernal pool. If only one criterion was present, the area would be evaluated based upon the criterion found. If the only criterion met was the presence of a basin, it was generally not considered a vernal pool. If the only criterion met was that water had been present there for more than 14 days, then the amount of disturbance in the areas was evaluated to determine if this could be a vernal pool where the basin and vegetation were too disturbed to be detectable (i.e., some road pools). If vernal pool vegetation was the only indicator, the amount of disturbance, species, amount of vegetation, and proximity to other vernal pools was considered to determine if the site was a vernal pool (e²M 2009).

3.3.3.2 Proposed Action

During the design phase of the Proposed Action, efforts would be made by Beale AFB to avoid and minimize potential construction-related disturbances (direct or indirect) on jurisdictional waters of the United States and wetlands.

Surface Water. Short-term, minor, adverse impacts on surface water would be anticipated due to the increase in impervious surface area. As part of the Proposed Action, Beale AFB would relocate and realign the drainages at the proposed project site, so "no net loss" in drainages would occur and runoff would continue to drain into the realigned drainages. With adherence to BMPs and Environmental Protection Measures during construction and demolition activities significant adverse impacts from erosion would be avoided (see **Section 3.3.4** and **Table 2-2**). Therefore, no permanent adverse impacts on surface water are anticipated.

Groundwater. Short-term, negligible, adverse impacts on groundwater would be anticipated due to the slight increase in water demand during construction and demolition activities. However, potential increases in water demand associated with Proposed Action would be temporary and are not anticipated to exceed existing capacity. Therefore, no permanent adverse impacts on groundwater are anticipated.

Floodplains. No temporary or permanent impacts on floodplains are anticipated. The proposed project site is outside of the 100-year floodplain on Beale AFB.

Jurisdictional Waters of the United States. Permanent, minor, adverse impacts on jurisdictional waters of the United States would be anticipated due to the filling, trenching, or removing of approximately

0.41 acres of jurisdictional waters of the United States within the proposed project area. All impacted jurisdictional waters of the United States would have an equivalent acreage created on-site; therefore, there would be no net loss of jurisdictional waters of the United States. All of the jurisdictional waters of the United States that would be adversely impacted by the Proposed Action are degraded and have a very low functionality.

3.3.3.3 Alternative 1

Surface Water. Alternative 1, would have potential to impact the same water resources as the Proposed Action. No additional impacts would be expected from Alternative 1.

Groundwater. Temporary, negligible adverse impacts on groundwater would be anticipated due to the slight increase in water demand during construction and demolition activities. However, potential increases in water demand associated with Alternative 1 would be temporary and are not anticipated to exceed existing capacity. Therefore, no permanent adverse impacts on groundwater are anticipated.

Floodplains. No temporary or permanent adverse impacts on floodplains are anticipated. The proposed project site is outside of the 100-year floodplain on Beale AFB.

Jurisdictional Waters of the United States. Permanent, minor, adverse impacts on jurisdictional waters of the United States would be anticipated due to the filling, trenching, or removing of approximately 0.41 acres of jurisdictional waters of the United States within the proposed project area. All impacted jurisdictional waters of the United States would have an equivalent acreage created on-site; therefore, there would be no net loss of jurisdictional waters of the United States. All of the jurisdictional waters of the United States that would be adversely impacted by the Proposed Action are degraded and have a very low functionality With adherence to BMPs and Environmental Protection Measures during construction and demolition activities, short- and long-term, negligible, adverse impacts on off-site waters of the United States and wetlands would be avoided (see **Section 3.3.4** and **Table 2-2**).

3.3.3.4 No Action Alternative

Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation. Under the No Action Alternative, there would be no impacts on water resources at Beale AFB.

3.3.4 Environmental Protection Measures

Measure 1: Clean Water Act Section 401 and 404 Permits and Compensation. Preparation and approval of Clean Water Act Section 401 and 404 permit applications would be obtained prior to commencement of construction and demolition activities for actions with potential for direct impacts on any jurisdictional waters of the United States. Due to the degraded conditions and low functionality of the jurisdictional waters of the United States found within the project area, compensation for impacts would be done by either rerouting the ditches or through the creation of similar drainage ditches. The replacement rate for impacts to jurisdictional water of the United States impacted by the project would be 1:1. The total acreage of jurisdictional waters of the United States after construction should be the same as prior to construction though the project may alter the courses or create additional drainages as needed to meet this requirement. All drainages rerouted or created for this purpose would need to be open soft-bottomed channels capable of the same functionality as the current ditches, carrying storm water and nuisance flows from and across the project site during storm events.

Measure 2: Best Management Practices. The contractor would adhere to BMPs and applicable codes and ordinances to reduce storm water runoff-related impacts to a level of insignificance. Construction vehicles and equipment would be prohibited off-road, outside designated work areas. In addition, all construction vehicles would be fueled and serviced in designated service areas and vehicles would observe the posted speed limit on paved roads and a 20-mile per hour speed limit on unpaved roads. Erosion and sediment controls would be in place during construction and demolition activities to reduce and control siltation and erosion impacts on areas outside of the proposed project site. All soil excavated in jurisdictional waters of the United States would be removed and disposed of by the contractor outside the project area. Coordination with the base Environmental Office is required prior to disposing of this excavated soil.

Measure 3: Construction Timeframe. Construction would only be allowed between 1 June and 31 October per CWA permit requirements.

Measure 4: National Pollutant Discharge Elimination System (NPDES) Stormwater Permit Requirements. A CWA Section 402 NPDES stormwater permit would be obtained and a Stormwater Pollution Prevention Plan would be prepared prior to commencing construction and demolition activities, per the California Regional Water Quality Control Board (CRWQCB), Central Valley Region, requirements for grading.

3.4 Biological Resources

3.4.1 Description of Resource

Biological resources include native or naturalized plants and animals and the habitats (i.e., wetlands and grasslands) in which they exist. Sensitive and protected biological resources include species listed as threatened or endangered by the Federal government or state agency. Wildlife, vegetation, and wetland resources provide aesthetic, recreational, and socioeconomic benefits to society. This section describes the aspects of the affected environment, including nonnative grasslands, wetland resources, and special-status species.

The Endangered Species Act (ESA) of 1973 established a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charged Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a threatened and endangered species or result in the destruction of critical habitat for these species, unless the agency has been granted an exemption. Bald eagles and golden eagles are protected by the Bald and Golden Eagle Protection Act. States might also have their own laws for protecting plants and animals they consider threatened or endangered.

Nonnative Grassland. The most common type of vegetation at Beale AFB is nonnative annual grassland, which covers approximately 18,835 acres of the installation (BAFB 2008c). Nonnative grassland is an upland vegetation community dominated by nonnative grasses and a variety of native and nonnative forbs. This community provides nesting and breeding habitat for a variety of grassland birds, as well as foraging habitat for many bird species that breed in other habitats. Nonnative grasslands also provide foraging habitat and cover for several species of mammals and lizards common on the installation.

Wetland Resources. Wetlands are special aquatic sites that have a greater resource value than most jurisdictional waters and require a different level of avoidance and mitigation. Seasonal wetlands at Beale AFB provide important foraging and breeding habitat and cover for wetland wildlife and invertebrates. These ephemeral wetlands also support highly specialized plant taxa adapted to growing conditions

associated with seasonal and year-to-year variation in water availability. Vernal pools are seasonal wetlands that potentially support many endangered species. Vernal pools on Beale AFB are classified as Northern Hardpan Vernal Pools (Sawyer and Keeler-Wolf 1995). These are shallow ephemeral water bodies found in depressions among grasslands that include vernal pools, vernal swale wetlands, and depressional seasonal wetlands. Given their relative isolation in upland vegetation communities, they provide unique habitat that supports many special-status species. The dominant plant species in high quality vernal pools at Beale AFB include coyote thistle (*Eryngium vaseyi*), Fremont goldfields (*Lasthenia fremontii*), white-flowered navarretia (*Navarretia leucocephala*), bractless hedge-hyssop (*Gratiola ebracteata*), vernal buttercup (*Ranunculus bonariensis*), annual hairgrass (*Deschampsia danthonioides*), field owl's clover (*Castilleja campestris*), Sacramento mesa mint (*Pogogyne ziziphoroides*), and dwarf woolly marbles (*Psilocarphus brevissimus*) (BAFB 2008c).

Special Status Species. There are six federally protected plant species with potential to occur at Beale AFB: Hoover's spurge (*Chamaesyce hooveri*), hairy Orcutt grass (*Orcuttia pilosa*), slender Orcutt grass (*Orcuttia tenuis*), Sacramento Orcutt grass (*Orcuttia viscida*), Hartweg's golden sunburst (*Pseudobahia bahiifolia*), and Greene's tuctoria (*Tuctoria greene*). None of these species have been observed on Beale AFB (BAFB 2008c).

There are 10 federally listed animal species with potential to occur at Beale AFB. Of these, six were evaluated for having some potential for individuals or their habitat to occur in the vicinity of the Proposed Action. The remaining four were excluded from further analysis for the following reasons: Longhorn fairy shrimp (*Branchinecta longiantenna*) and conservancy fairy shrimp (*Branchinecta conservatio*) have particular vernal pool requirements that do not exist in the project area. Neither of these species has been detected on the installation after extensive vernal pool surveys. California tiger salamander (*Ambystoma tigrinum californiense*) has not been observed on the installation during previous surveys. Beale AFB lies north of the species' range and it is presumed extirpated in Yuba County (BAFB 2005d). Central Valley steelhead (*Oncorhynchus mykiss*) uses perennial and intermittent streams, and has been observed in Dry Creek upstream from Beale AFB (BAFB 2008c). No perennial or intermittent streams are located in the vicinity of the Proposed Action, and the project would have no impacts on Dry Creek.

Federally protected species evaluated in the Biological Survey Report (see **Appendix D**) and included in this assessment are listed in **Table 3-9**.

Table 3-9. Federally Listed Species

Common Name	Scientific Name	Federal Status
Vernal pool tadpole shrimp	*Lepidurus packardi*	Endangered
Vernal pool fairy shrimp	*Branchinecta lynchi*	Threatened
Valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	Threatened
California red-legged frog	*Rana aurora draytonii*	Threatened
Giant garter snake	*Thamnophis gigas*	Threatened
Bald eagle	*Haliaeetus leucocephalus*	Delisted*

Note: *Delisted, to be monitored for 5 years.

Vernal pool fairy shrimp and vernal pool tadpole shrimp are found in vernal pools and other ephemeral wetlands that form in grassy swales. Vernal pool fairy shrimp and vernal pool tadpole shrimp have been previously documented on Beale AFB.

The bald eagle is an irregular migrant to the area, and is considered to use the installation for occasional foraging.

The California red-legged frog might be supported by emergent riparian vegetation near deep ponds or intermittent streams, on the installation. This species has not been documented on Beale AFB.

The Valley elderberry longhorn beetle is found at the edges of riparian habitat and is closely associated with blue elderberry (*Sambucus mexicana*). The existence of valley elderberry longhorn beetle has been previously detected on Beale AFB during protocol-level surveys.

The giant garter snake is associated with marshes, water conveyance channels, and associated uplands. This species requires sufficient water to supply cover and food such as small fish and amphibians; and emergent, herbaceous aquatic vegetation accompanied by vegetated banks to provide basking and foraging habitat (BAFB 2005d). The giant garter snake has not been documented on Beale AFB, but has the potential to occur in permanent wetlands.

Several other special-status species occur on Beale AFB and have the potential to fly over or forage in the vicinity of the proposed project site. Western burrowing owl (*Athene cunicularia hypugea*) breeds and forages in nonnative grasslands and agricultural fields and is a year-round resident of Beale AFB. Golden eagle (*Aquila chrysaetos*) uses grasslands and savannas for foraging and is a year-round visitor. White-tailed kite (*Elanus leucurus*) uses open savannas, grasslands, and wetlands for foraging and is a year-round resident. Northern harrier (*Circus cyaneus*) nests and forages in grasslands and wetlands and is a year-round resident. Ferruginous hawk (*Buteo regalis*) uses open grasslands with perches and is a winter resident of Beale AFB. Golden eagle and white-tailed kite are fully protected under California Fish and Game Code. Western burrowing owl, northern harrier, and ferruginous hawk are considered species of special concern by state and Federal agencies, but receive no legal protection. Bird species present at the proposed project site are subject to regulation under the Migratory Bird Treaty Act.

Several species of bats are known to occur on Beale AFB and sometimes use buildings as roosts. Developed areas generally provide no suitable habitat for special-status species; however, buildings could provide habitat for special-status bats such as pallid bat (*Antrozous pallidus*) and pale big-eared bat (*Corynorhinus townsendii pallescens*) (BAFB 2005d).

3.4.2 Description of Affected Environment

The site of the Proposed Action is dominated by a previously disturbed annual grassland community. Nonnative grasses and forbs are the primary vegetation present (approximately 14.3 acres) and are characterized by a predominance of filaree (*Erodium botrys*) and exotic brome (*Bromus* sp.). The type of grassland present at the site is generally considered a low-quality exotic habitat. The nonnative grasslands that would be affected by the Proposed Action have been subject to frequent disturbances from human activity, such as mowing. Prior to being used by Beale AFB, the land was used for farming and livestock grazing. The approximately 22-acre Fitness Center area was previously developed during World War II and later abandoned (e²M 2009). This type of regularly disturbed, low-diversity habitat generally provides less value to wildlife than undisturbed native grassland with higher plant species diversity.

Nonnative ornamental trees are scattered over the project area, primarily along roadways and parking areas. There is also a single cottonwood tree (*Populus fremontii*) associated with Ditch F.

3.4.3 Environmental Consequences

3.4.3.1 Evaluation Criteria

Evaluation criteria for impacts on biological resources are based on the potential for special-status species or environmentally sensitive areas to exist in or near the proposed project site, and the anticipated impacts the Proposed Action, Alternative 1, and the No Action Alternative would have on these resources. Determining the significance of potential impacts on biological resources is based on the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, the percentage of the resource that would be affected relative to its occurrence in the region, the sensitivity of the resource to proposed activities, and the duration of the ecological impacts of the project. Impacts on biological resources are significant if special-status species or habitats of concern are adversely affected.

3.4.3.2 Proposed Action

During the design phase of the Proposed Action, efforts would be made by Beale AFB to avoid and minimize potential construction-related disturbances (direct or indirect) on sensitive habitats and associated special-status plant and wildlife species. Beale AFB has limited options regarding location of the proposed project site due to property boundary and mission-related constraints, but features would be sited to minimize impacts on sensitive natural resources. The anticipated potential impacts of the Proposed Action on biological resources are summarized in **Table 3-10. Figure 3-2** shows the location of habitats potentially impacted by the Proposed Action.

Table 3-10. Summary of Impacts on Biological Resources

Resource	Proposed Action	Alternative 1	No Action
Vegetation	14.0 acres of nonnative grasslands impacted	14.3 acres of nonnative grasslands impacted	No impacts
Wildlife	No significant impacts on wildlife would result from implementation of the Proposed Action if Environmental Protection Measures in **Section 3.5.4** are followed.	No significant impacts on wildlife would result from implementation of Alternative 1 if Environmental Protection Measures in **Section 3.5.4** are followed.	No impacts
Vernal pool tadpole shrimp	No impacts	No impacts	No impacts
Vernal pool fairy shrimp	No impacts	No impacts	No impacts
Valley elderberry longhorn beetle	No impacts	No impacts	No impacts
California red-legged frog	No impacts	No impacts	No impacts
Giant garter snake	No impacts	No impacts	No impacts
Bald eagle	No impacts	No impacts	No impacts

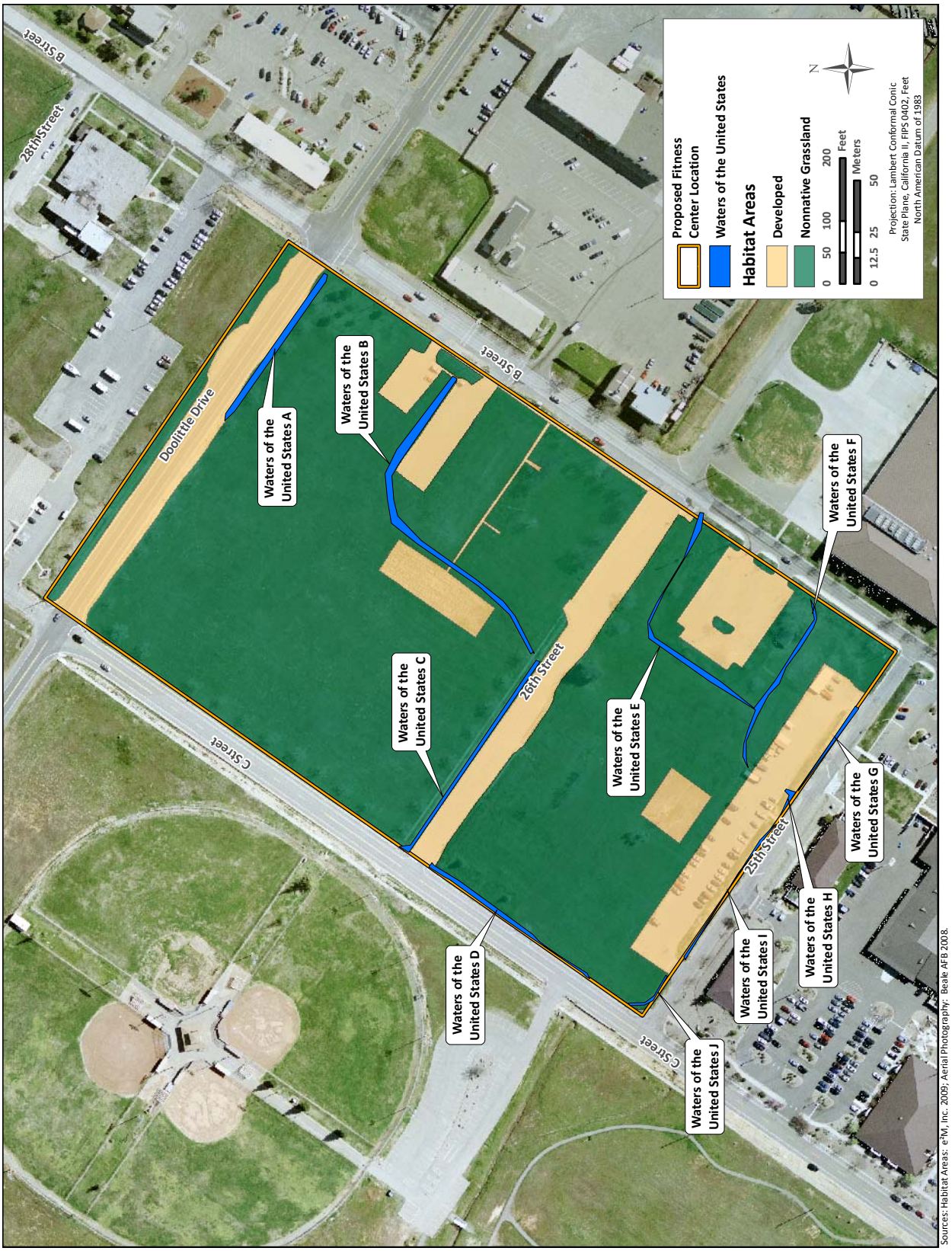

Figure 3-2. Biological Resources in the Proposed Fitness Center Location

Nonnative grasslands. Implementation of the Proposed Action would result in a loss of approximately 14.0 acres of nonnative grassland habitat during construction (e²M 2009). This is a negligible loss of this habitat type and represents a very small portion of the abundance of comparable nonnative grassland Beale AFB has in the surrounding area. The long-term, adverse impacts on nonnative grassland from implementation of the Proposed Action would be negligible.

Wetland Resources. No vernal pools would be impacted by the Proposed Action. The Proposed Action would not contribute to a substantial cumulative impact on other water resources. During field surveys, ditches on the project site did not hold water long enough to support fairy shrimp; therefore, no listed vernal pool species are expected to occur in the project area.

Special-Status Species. The Proposed Action is not expected to impact special-status species. Vernal pool tadpole and fairy shrimp are identified in the Beale AFB INRMP as having a low potential for occurring in ephemeral drainages, swales, and artificial drainages. Due to the presence of artificial ephemeral drainages on the site, this species has a very low potential to occur. The fact that there was no ponded water in the water features within the project area 13 days after heavy rainstorms reduces the probability of there being any fairy shrimp on-site (e²M 2009). Vernal pool fairy shrimp generally require a minimum of 18 days of ponded water for their lifecycle (Eriksen et al. 1999). Vernal pool tadpole shrimp have been documented as requiring at least 25 days of ponded water to mature (Helm 1998). No vernal pool shrimp were observed during biological surveys and it is not expected for either species to occur on the proposed project site.

The valley elderberry longhorn beetle was not observed during the surveys. Additionally, no elderberry shrubs are located in the project area and no riparian vegetation exists within the vicinity of the project. The proposed project site does not have appropriate habitat for this species.

The bald eagle is only considered to use the installation for occasional foraging. Bald eagles occasionally occur on Beale AFB during winter months; however, Beale AFB does not support bald eagle breeding habitat. No disturbance to nesting sites would occur and there is abundant foraging ground in the surrounding areas.

The California red-legged frog was not observed during biological surveys of the proposed project site. This species is very rare within Yuba County and only one unsubstantiated report exists for Beale AFB. The Proposed Action does not impact ponds, streams, or emergent riparian habitat which could be used by this species.

The giant garter snake was not observed during the biological surveys of the proposed project site. Beale AFB lies well beyond the eastern boundary of the species' documented range. The nearest giant garter snake location recorded lies more than 8 miles southwest of Beale (BAFB 2008c). In addition, the Proposed Action project area lacks sufficient water and aquatic vegetation to support suitable habitat for the species.

The western burrowing owl was not observed during biological surveys of the proposed project site. The area has suitable topography and grassland foraging habitat for burrowing owls; however, no burrowing owls are known to exist within the vicinity of the project area. The nearest documented occurrences of burrowing owl at Beale AFB are approximately 2 miles to the southwest and 2 miles to the northwest of the Proposed Action.

The eaves of the buildings slated for demolition for this project are being used for nesting by numerous birds. European starlings (*Sturnus vulgaris*) were observed at the time of the site visit, and there were remnants of nests from other species observed as well. The planned project could have short-term direct,

adverse impacts on migratory birds by disturbing nesting sites and associated mortality during building demolition, ground-disturbing activities, or vegetation clearing. However, implementation of seasonal timing to conduct the demolition and tree clearing during the nonbreeding season would eliminate significant impacts on this resource. Long-term, indirect, adverse impacts from the Proposed Action could result from subsequent disturbance during use of new facilities and associated noise. Long-term disturbances would not be significant because the nonnative grasslands affected by the Proposed Action have been subject to continual disturbances from human activity, and the types of wildlife that use the area are accustomed to human presence.

The demolition of the buildings in this project potentially could have a direct, adverse impact on several species of bats that are known to occur on Beale AFB and sometimes use buildings as roosts. Developed areas generally provide no suitable habitat for special-status species; however, buildings could provide roosting habitat for special-status bats such as pallid bat and pale big-eared bat (BAFB 2005d). These impacts would be avoided by inspecting the buildings for bats prior to demolition. A building survey would be conducted in the winter prior to the Proposed Action to determine if the structures are used as a hibernaculum, and then again prior to demolition. If bats are found to use a building, a bat exclusion system would be implemented to prevent significant impacts (see **Environmental Protection Measure 2, Section 3.5.4**). This would be implemented during the nonbreeding season to avoid impacts on reproductive females during the critical period immediately prior to parturition or during lactation, and well before winter hibernation.

Unavoidable minor, adverse impacts would result on nonnative grasslands resources from implementation of the Proposed Action. None of these impacts would be significant. The Proposed Action would result in minimal loss of vegetation and wildlife habitat. Because implementation of the Proposed Action occurs in an area planned for development and would result in temporary or minor impacts on biological resources at Beale AFB, the Proposed Action would not contribute to a substantial cumulative impact on other biological resources.

3.4.3.3 Alternative 1

Under Alternative 1, Beale AFB would conduct all of the actions described under the Proposed Action, and, in addition, widen Doolittle Drive by adding turn lanes into the proposed Fitness Center. Widening Doolittle Drive would impact an additional 0.3 acres of nonnative grassland on the northeast side of the road.

In addition to impacts identified in the Proposed Action, long-term, minor, adverse impacts on nonnative grasslands would be expected as a result of grading or paving an additional 0.3 acres of habitat. None of these impacts would be significant. Alternative 1 would not result in a significant loss of habitat, and would not contribute to a substantial cumulative impact on other biological resources.

3.4.3.4 No Action Alternative

Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation. Under the No Action Alternative there would be no impacts on biological resources at Beale AFB.

3.4.4 Environmental Protection Measures

Measure 1: Timing of Construction Activities. All building demolition, vegetation clearing, and tree removal would occur outside of the bird breeding season.

Measure 2: Bat Surveys and Exclusion. Buildings would be inspected during the winter by a biologist experienced in locating bats and bat colonies before the start of any demolition or construction activities. If a bat colony is found then demolition would be delayed until an exclusion system is installed under the direction of the biologist to ensure that all bats are removed from the building and unable to return.

3.5 Cultural Resources

3.5.1 Description of Resource

Cultural resources are aspects of the physical environment that relate to human culture and society and cultural institutions that hold communities together and link them to their surroundings. Cultural resources include expressions of human culture and history in the physical environment (such as prehistoric and historic sites, buildings, structures, objects, districts, and other places, including natural features) considered to be important to a culture, subculture, or community. Cultural resources also include traditional life ways and practices, community values, and institutions.

Cultural resources consist of prehistoric and historic artifacts, archaeological sites, districts, structures, or any other physical evidence of previous human activities that are part of the current landscape. There are the following four primary categories of cultural resources on Federal land that are addressed by Federal laws and regulations: (1) archaeological sites (typically subsurface deposits), (2) architectural resources (standing structures and buildings), (3) sacred sites and Traditional Cultural Properties (TCP) (i.e., resources or landscapes determined to be important to a particular culture or group), and (4) certain Native American cultural items (i.e., human remains, funerary objects, sacred objects, or objects of cultural patrimony). For undertakings on Federal property, cultural resource impact assessment is in accordance with the National Historic Preservation Act of 1966 (NHPA); 36 CFR Part 800, Protection of Historic and Cultural Properties; Archaeological Resources Protection Act of 1979 (ARPA); EO 13007, Indian Sacred Sites, Native American Graves Protection and Repatriation Act of 1990, EO 13084, Consultation and Coordination with Indian Tribal Governments; and other authorities.

As part of the EA process, NEPA requires an assessment of potential impacts on cultural resources. Under Section 106 of the NHPA, the Federal agency official is charged with taking into account the impacts of its undertaking on historic properties and affording the Advisory Council on Historic Preservation (ACHP) an opportunity to comment in accordance with its regulations, 36 CFR Part 800. Historic properties are cultural resources listed in or determined to be eligible for listing in the NRHP. Cultural resources not evaluated for NRHP eligibility are considered eligible for compliance purposes until such evaluation has been completed and a formal determination of eligibility is made.

3.5.2 Description of Affected Environment

Approximately 91 percent of Beale AFB has been systematically surveyed for cultural resources by more than 20 archaeological investigations and two historic architectural investigations according to the Beale AFB *Integrated Cultural Resources Management Plan* (ICRMP) (BAFB 2008b). Portions of the installation that remain unsurveyed are limited to heavily disturbed areas associated with the flightline, cantonment, and military family housing areas in the interior of the installation. These areas have been defined by Beale AFB as "archaeological free zones" based on low potential for intact archaeological deposits (BAFB 2008b).

To summarize the results of previous cultural investigations from the Beale AFB ICRMP (BAFB 2008b), Beale AFB has identified 37 prehistoric sites and 1 site with a prehistoric component on Beale AFB. They consist of two primary property types: bedrock milling stations and flaked lithic scatters. A total of 42 pre-military historic sites and 7 sites with a pre-military historic component has been formally

recorded on Beale AFB. They consist of three primary property types: ranch/farm complexes, refuse scatters, and bridges. Some sites have been determined not eligible for NRHP, and some sites in each category still require consultation with the State Historic Preservation Office (SHPO) for a formal determination. A total of 39 military-era historic sites and 3 sites with a military-era historic component have been formally recorded on Beale AFB. They consist primarily of structural remnants associated with Camp Beale established as a training site for the 13th Armored and 81st and 96th Infantry Divisions in October 1942. The Precision Acquisition Vehicle Entry Phased Array Warning System (PAVE PAWS) facility (consisting of 6 buildings) of the Cold War era has been determined eligible for the NRHP, despite being less than 50 years old. None of these properties is in the vicinity of the Proposed Action or the Area of Potential Affect (APE) for the Proposed Action.

3.5.3 Environmental Consequences

3.5.3.1 Evaluation Criteria

Analysis of the potential impacts and adverse effects on cultural resources associated with proposed actions on Federal property includes the assessment of both direct and indirect impacts on cultural resources. Adverse effects may include physically altering, damaging, or destroying a cultural resources. They may also include altering a characteristic that contributes to a resource's NRHP eligibility or introducing a visual or audible elements out of character with or affecting the original setting of the resource. The intentional or benign neglect of a cultural resource that results in its full or partial destruction also may be an adverse effect. Adverse effects associated with indirect impacts may include the cumulative effects of the intensified use of an area in which a cultural resource is located resulting from construction or project-related improvement of the area, including improvements to transportation corridors in the vicinity that provide for or indirectly lead to increased access to the area.

3.5.3.2 Proposed Action

For the purpose of determining potential impacts on cultural resources, the APE for the Proposed Action is defined as within 500 feet of the boundaries of the Fitness Center construction site and the area where facilities are proposed for demolition. An archaeological site record search from the ICRMP was conducted by the Beale AFB Cultural Resources Manager for recorded sites within the APE associated with the Proposed Action. The site record search resulted in no known recorded archaeological resources as being identified in the APE.

The APE for the Proposed Action has been previously surveyed for cultural resources, and no cultural resources with a visible surface component were located and identified (BAFB 2008b). However, it is remotely possible that there are deeply buried archaeological resources not identified or recorded during previously conducted surveys. No TCPs, cemeteries, or isolated human burials have been identified within the boundaries of the Proposed Action.

One facility associated with the Proposed Action (HAWC, Building 2459) was constructed in 1952. Consultation with the SHPO has been initiated by the Beale AFB Cultural Resources Manager to determine if Building 2459 is potentially eligible for nomination to the NRHP. Beale AFB has evaluated the property as not eligible for the NRHP. It is anticipated that the SHPO would concur with Beale AFB's evaluation recommendation. Should Building 2459 be determined to be eligible for the NRHP, Beale AFB would comply with Section 106 of the NHPA, as appropriate. Therefore, no direct or indirect adverse impacts to cultural resources are anticipated from implementation of the Proposed Action.

The Beale AFB ICRMP contains Standard Operating Procedures for the inadvertent discovery of cultural resources, including archaeological artifacts or sites with human remains during construction. If a

discovery occurs during construction, the unanticipated archaeological discoveries procedures, as defined in the Beale AFB ICRMP (BAFB 2008b) would be followed. Excavation and disturbance of the site would cease, the Cultural Resources Manager would be notified immediately, and the discovery would be protected. The Cultural Resources Manager would take actions to evaluate the discovery and provide guidance to the project engineer on any actions for appropriate management treatment of the resource (BAFB 2008b).

This EA provides environmental protection measures (see **Section 3.5.4**) to minimize any possible adverse effect on any unknown cultural resources. Under Measure 1, all construction and maintenance personnel would receive cultural resources awareness training by the Base Environmental Office regarding what constitutes cultural resources and why they are important. Personnel working on site would know what to look for to minimize possible adverse impacts. Under Measure 2, the inadvertent discovery procedures in the ICRMP would be implemented as previously described. Accordingly, no indirect or direct adverse impacts on cultural resources would be expected from the Proposed Action.

3.5.3.3 Alternative 1

Alternative 1 would have similar potential impacts as the Proposed Action.

3.5.3.4 No Action Alternative

Under the No Action Alternative, Beale AFB would not construct the proposed Fitness Center, which would result in the continuation of the existing condition, as described in **Section 2.2.2**. In addition, existing facilities would not be demolished. Therefore, no direct or indirect environmental impacts would be expected on cultural resources from implementation of the No Action Alternative.

3.5.4 Environmental Protection Measures

Measure 1: Cultural Resources Awareness Training. All construction and maintenance personnel would receive cultural resources awareness training by the Base Environmental Office regarding the appropriate work practices necessary to protect cultural resources. This training would address Federal, state, and local laws regarding cultural resources; the importance of these resources and the purpose and necessity of protecting them; and the appropriate methods for reporting and protecting inadvertently discovered cultural resources.

Measure 2: Inadvertent Discovery of Archaeological Resources. The following procedure applies to the inadvertent discovery of archaeological remains during ground-disturbing activities at the installation:

> *In the event that human remains, artifacts, or other archaeological materials are discovered during the course of any action, project, or activity at Beale AFB, all ground-disturbing activity at the point of discovery, within a reasonable buffer exclusionary area, must be halted and the Cultural Resources Manager notified.*

Any inadvertent discovery would be initially assumed to be potentially eligible for the NRHP and afforded appropriate protection until it is determined to be otherwise.

3.6 Transportation

3.6.1 Description of Resource

The transportation resource is defined as the system of roadways and highways that are in the vicinity of the proposed project area and could reasonably be expected to be potentially impacted by the Proposed Action.

3.6.2 Description of Affected Environment

Regional access to Beale AFB is provided by State Route (SR) 65, SR 70, and SR 20. SR 65 is a north-south directional roadway that extends from Interstate 80 in Roseville, to SR 70 approximately 7 miles south of Marysville. Five main roads provide access to the installation. North Beale Road extends from SR 70 in Linda, to the Main Gate, and is the primary road that connects the installation and SR 70, Marysville, and Yuba City. Hammonton-Smartville Road is a two-lane rural roadway that provides access from North Beale Road in Linda, to SR 20 near Smartville. It also provides access to the installation at the Doolittle Gate. Smartville Road is a two-lane rural roadway that provides access from the Grass Valley Gate to Hammonton-Smartville Road south of SR 20. South Beale Road is a two-lane roadway that provides access from SR 65 northwest of Wheatland, to the Wheatland Gate. Spenceville Road is a two-lane rural roadway that connects SR 65 at the City of Wheatland, to the Vassar Lake Gate. The road network on Beale AFB consists of arterials, collectors, and local streets. Arterials, those streets that carry the majority of the traffic, include Gavin Mandery Drive (Main Gate to Camp Beale Highway), Doolittle Drive (Doolittle Gate to Warren Shingle Road), Grass Valley Road/Warren Shingle Road (Grass Valley Gate to "J" Street), Camp Beale Highway (Vassar Lake Gate to Warren Shingle Road) , and "J" Street (Wheatland Gate to Doolittle Drive) (BAFB 2008a).

The proposed project site (area proposed for new construction) is bounded by Doolittle Drive to the northeast, B Street to the southeast, 25th Street to the southwest, and C Street to the northwest. 26th Street is a northwest-southeast directional roadway that intersects the central portion of the proposed project site. Three of the four facilities proposed for demolition (Buildings 2418, 2424, and 2422) are bounded by 23rd Street to the northeast, A Street to the southeast, Warren Shingle Road to the south, and B Street to the west and northwest. The remaining facility proposed for demolition (Building 2459) is bounded by 25th Street to the northeast, A Street to the southeast, 23rd Street to the southwest, and B Street to the northwest (see **Figure 2-1**).

3.6.3 Environmental Consequences

3.6.3.1 Evaluation Criteria

Impacts on transportation are considered to be adverse if the Proposed Action would result in a substantial increase in traffic, which is defined as more than 50 trips per hour, on local roadways. Project trip generation is based on an estimate of the number of equipment and crew members that would be present during construction activities.

3.6.3.2 Proposed Action

Under the Proposed Action, Beale AFB proposes to construct a Fitness Center and demolish existing inadequate and substandard recreational facilities. As part of the Proposed Action, a portion of 26th Street, which intersects the central portion of the proposed project site, would be removed to meet AT/FP requirements.

Short-term, minor, adverse impacts on traffic circulation due to road and lane closures from construction and demolition activities would be anticipated. The Proposed Action would require delivery of materials to construction sites and removal of debris from demolition sites. Construction traffic would comprise a small percentage of the total existing traffic and many of the vehicles would be driven to and kept on site for the duration of construction and demolition activities, resulting in relatively few additional trips. Furthermore, potential increases in traffic volume associated with Proposed Action would be temporary. Heavy vehicles are frequently on installation roads; therefore, the vehicles necessary for construction and demolition would be expected to have a minor adverse impact on installation roads. All road and lane closures would be temporary in nature and would be coordinated with Security Forces. In addition, appropriate signage would be in place; therefore, no long-term, adverse direct or indirect impacts on transportation systems are anticipated.

3.6.3.3 Alternative 1

Under Alternative 1, Beale AFB would conduct all of the actions described under the Proposed Action and, in addition, widen Doolittle Drive on either side by adding left- and right-hand turn lanes into the proposed Fitness Center. Approximately 16,448 ft^2 of new pavement would be added in the widening of Doolittle Drive.

Short-term, minor, adverse impacts on traffic circulation due to road and lane closures from construction and demolition activities would be anticipated. The construction and demolition phases of Alternative 1 would require delivery of materials to construction sites and removal of debris from demolition sites. Construction traffic would comprise a small percentage of the total existing traffic and many of the vehicles would be driven to and kept on site for the duration of construction and demolition activities, resulting in relatively few additional trips. Furthermore, potential increases in traffic volume associated with Alternative 1 would be temporary. Heavy vehicles are frequently on installation roads; therefore, the vehicles necessary for construction and demolition would be expected to have a minor adverse impact on installation roads. All road and lane closures would temporary in nature and coordinated with Security Forces. In addition, appropriate signage would be in place; therefore, no long-term, adverse direct or indirect impacts on transportation systems are anticipated.

3.6.3.4 No Action Alternative

Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation; therefore, there would be no change in or impacts on transportation at Beale AFB.

3.6.4 Environmental Protection Measures

Measure 1: Road Closure Coordination. As part of the Proposed Action, the USAF would coordinate with Beale AFB Security Forces regarding road and lane closures, appropriate signage, and the design of the proposed turn lanes on Doolittle Drive prior to commencement of any construction or demolition activities.

3.7 Safety

3.7.1 Description of Resource

A safe environment is one in which the potential for death, serious bodily injury or illness, or property damage is eliminated or reduced as much as possible. Human health and safety addresses workers' health

and safety during burning, demolition, and construction activities, and public safety during burning, demolition, and construction activities and subsequent operations of those facilities.

AFI 91-202, *USAF Mishap Prevention Program*, implements AFPD 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel. AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health* (AFOSH) *Program*, implements AFPD 91-3, *Occupational Safety and Health,* by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities.

3.7.2 Description of Affected Environment

Beale AFB has several activities that require Explosive Quantity Distance (EQD) Safety Zones. These zones are established to minimize risk and exposure to individuals from explosives and explosive storage facilities (BAFB 2008a). According to the Beale AFB General Plan (BAFB 2008a), there are numerous EQD Safety Zones on the northern and southern portions of the installation.

The Military Munitions Response Program (MMRP) addresses nonoperational military ranges and other sites that are suspected or known to contain unexploded ordnance (UXO), discarded military munitions, or munition constituents. Beale AFB has 44 range sites which contain various munitions, UXO, and Chemical Agent Identification Sets (CAIS). Most of the munitions, UXO, and CAIS on the surface have been removed. However, munitions, UXO, and CAIS might still be found below the ground surface (BAFB 2005a). There are no EQD Safety Zones, suspected UXO, or MMRP sites at the proposed project site.

3.7.3 Environmental Consequences

3.7.3.1 Evaluation Criteria

A significant impact would occur if the Proposed Action were to substantially increase risks associated with the safety of Beale AFB personnel, contractors, or the local community; or substantially hinder the ability to respond to an emergency. Impacts were assessed based on the potential impacts of construction and demolition activities.

3.7.3.2 Proposed Action

Short-term, minor, adverse impacts on safety would be anticipated due to the potential slight increase in the short-term risks associated with construction and demolition activities that would occur during the normal workday. During all phases of the Proposed Action, safety standards required by the OSHA and NIOSH would be followed. Workers would be required to wear protective gear such as ear protection, steel-toed boots, hard hat, gloves, and other appropriate safety gear. Construction and demolition areas would be fenced and appropriately marked with signs and placards. Construction and demolition equipment and associated trucks transporting material to and from the construction and demolition sites would be directed to roads and streets that carry minimum vehicles.

Although no EQD Safety Zones, UXO, or MMRP sites are located at the proposed project site, there is still the possibility of encountering munitions, UXO, and CAIS related materials below the ground

surface during construction and demolition activities. If inadvertent discovery of munitions, UXO, or CAIS occurs during construction and demolition activities, activities would be stopped and Environmental Protection Measures described in **Section 3.7.4** and **Table 2-2** would be followed.

3.7.3.3 Alternative 1

Alternative 1 would have similar impacts as the Proposed Action. Therefore, no long-term, adverse, direct or indirect impacts on safety are anticipated.

3.7.3.4 No Action Alternative

Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation; therefore, there would be no change in or impacts on safety.

3.7.4 Environmental Protection Measures

Measure 1: Ground Safety Requirements and Coordination. All contractors performing construction and demolition activities at Beale AFB are responsible for following ground safety regulations and worker compensation programs. In addition, all contractors are required to conduct construction and demolition activities in a manner that does not pose any risk to its workers or installation personnel. An industrial hygiene program addresses exposure to hazardous materials, use of personal protective equipment, and the availability of Material Safety Data Sheets. Industrial hygiene is the responsibility of contractors, as applicable.

Measure 2: Munitions, UXO, and CAIS Advisory. If any suspected military munitions, UXO, or CAIS related material is found during construction and demolition activities, work would stop in the area, personnel would move away from the site, and Beale Explosive Ordnance Disposal (EOD) Flight would be contacted.

3.8 Utilities and Infrastructure

3.8.1 Description of Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function and includes utility lines. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as "urban" or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. Utilities and infrastructure include power supply, water supply, sewer and waste water systems, gas supply, liquid fuel supply, communications, transportation, and solid waste disposal.

3.8.2 Description of Affected Environment

The infrastructure and utility information contained in this section provides a brief overview of each infrastructure component and a summary of its existing general condition. In general, infrastructure systems at Beale AFB are in fair condition with ample capacity for future growth; however, many of the systems require upgrades and ongoing maintenance (BAFB 2008a).

Water Supply. Beale AFB is completely independent from any outside water source. Water is supplied from nine on-installation wells and is pumped to a new treatment plant. All of the well pumps have been replaced with new submersible pumps. The Water Treatment Plant removes iron and manganese from the well water. The installation has an average demand of 1.28 million gallons per day during the winter months and an average demand of 3.5 million gallons per day during summer months. The installation has a total water storage capacity of 5.2 million gallons. Water mains consist of polyvinyl chloride, asbestos cement, cast iron, and steel. The installation has funded more than 15 million dollars in upgrades replacing most of the original steel pipe that was causing deterioration in water quality from tuberculation and iron and manganese deposits. Wells have been renovated and casings grouted to prevent water intrusion from a perched aquifer (BAFB 2008a).

Sanitary Sewer and Wastewater System. The Beale AFB sanitary sewer system consists of a gravity and force main collection system and a Wastewater Treatment Plant. The collection system consists of approximately 47 miles of sewer main, ranging in size from 6 to 24 inches in diameter. Because elevations at Beale AFB are 400 to 500 feet higher on the eastern region of the installation than on the western region of the installation, the majority of the sanitary sewer system is gravity fed. Additionally, a number of ejector stations service various other facilities throughout the installation. The Wastewater Treatment Plant (Building 124) was constructed in 1940 and has a rated capacity of 5 million gallons per day. Effluent from the Wastewater Treatment Plant is pumped to the golf course or distributed to land-based cannon field and is regulated by NPDES Permit Number CA0110299 (BAFB 2008a).

Storm Drainage System. The principal surface drainage systems for Beale AFB are Dry, Hutchinson, and Reeds creeks. The western parameters of these creeks are surrounded by a wide floodplain area. Dry Creek flows year round and Hutchinson and Reeds creeks are intermittent. Storm water runoff is evacuated through a system of open ditches, storm sewers, culverts, and pipes. The system includes approximately 49 miles of curbs and gutters, most of which are located in the flight line and Military Family Housing areas. Storm water flow is directed to the sanitary sewer or drainage ditches, and is discharged into the creeks. Beale AFB storm water discharges are regulated by the California Statewide General Industrial Activities Storm Water Discharge Permit Number 5A58S009991 (BAFB 2008a).

Electrical System. Beale AFB purchases power from Pacific Gas and Electric (PG&E). Power is delivered by three transmission lines to two metering points. These lines enter the installation at the Grass Valley Substation. All substations, with the exception of the Doolittle Substation, have two transformers each. Each transformer in the four substations is capable of supporting the full load of the substation. Most areas of the installation have redundant lines to provide further reliability. Approximately 80 percent of the distribution system is overhead and 20 percent is underground (BAFB 2008a).

Natural Gas System. PG&E supplies all of Beale AFB's noninterruptible gas to the maximum contracted amount of 32 million cubic feet (mcf) per hour (768 mcf per day) (BAFB 2008a).

Communications Systems. The Beale AFB information transfer system architecture consists of aerial and underground copper and fiber optic cables. Automated information systems provide service access from the installation telephone system, the Defense Information System Network, Defense Data Network, and the Defense Switched Network. A government-owned, contractor-maintained, buried copper cable plant services the entire installation, except for Military Family Housing units, where the cable plant is exclusively owned and maintained by Pacific Bell (PACBELL). The government-owned copper cable plant was installed in 1989 as part of the Installation Information Digital Distribution System upgrade, which included the acquisition in 1994 of the PACBELL plant. Government cabling runs parallel to the previously used PACBELL plant, which has not been removed. The Beale AFB fiber optic backbone cable system joins local area networks together across the installation, and carries the heaviest

information transfer traffic. This system is installed in conduits with three spare innerducts (BAFB 2008a).

3.8.3 Environmental Consequences

3.8.3.1 Evaluation Criteria

Impacts on infrastructure and utilities are evaluated for their potential to disrupt or improve existing levels of service and create additional needs for energy (natural gas and electric), potable water, sanitary sewer and wastewater systems, storm water systems, and liquid fuels management. Impacts might arise from energy needs created by either direct or indirect workforce and population changes related to installation activities. Impacts would be considered significant if implementation of the Proposed Action resulted in exceeded capacity of a utility, a long-term interruption of the utility, a violation of a permit condition, or a violation of an approved plan for a utility.

3.8.3.2 Proposed Action

The Proposed Action would result in the use of many of the infrastructure and utility resources discussed above in **Section 3.9.2**; however, impacts on infrastructure and utilities from the Proposed Action would be negligible to minor, compared to the existing demand. Sustainable design measures would be used to reduce demand. For the reasons discussed above, only the impacts from the Proposed Action on infrastructure and utility resources of interest are addressed below.

Water Supply. Short-term, negligible, adverse impacts on water supply would be anticipated. Water demand would increase slightly during construction and demolition activities; however, potential increases in water demand associated with Proposed Action would be temporary and are not anticipated to exceed existing capacity. Therefore, no long-term, adverse direct or indirect impacts on water supply are anticipated.

Sanitary Sewer and Wastewater System. Short-term, negligible, adverse impacts on sanitary sewer and wastewater systems would be anticipated. Because all of the wastewater at Beale AFB is treated on-installation through the Wastewater Treatment Plant, no wastewater would be transported off-site. Potential increases in wastewater associated with construction and demolition activities would be temporary and are not anticipated to exceed the existing capacity of the Wastewater Treatment Plant. No long-term, adverse direct or indirect impacts on sanitary sewer and wastewater systems from the Proposed Action are anticipated.

Storm Water Systems. Short-term and long-term, negligible to minor, adverse impacts on storm water systems would be anticipated. As part of the Proposed Action storm water drainages that run through the proposed project site would be realigned; therefore, there would be "no net loss" in drainages as a result of the Proposed Action. Ground disturbance resulting from the Proposed Action would temporarily increase the potential for soil erosion and sheet flow runoff. Soil compaction and increased impermeable surfaces (e.g., new pavements and sidewalks) would decrease storm water permeation into the ground and thereby permanently increase sheet flow runoff into the storm water drainage system.

Electrical System. No short- or long-term, adverse, direct or indirect impacts on electrical systems are anticipated. During the construction and demolition phases of the Proposed Action, no additional demand on the electrical systems in place would be anticipated. Upon completion of the Proposed Action, the newly constructed Fitness Center would be connected to the existing electrical system. Any potential increase in demand would not be anticipated to exceed the current capacity.

Natural Gas System. No short- or long-term, adverse, direct or indirect impacts on natural gas systems are anticipated. Construction and demolition activities associated with the Proposed Action would not require the use of natural gas. Upon completion of the Proposed Action, the newly constructed Fitness Center would be connected to the existing natural gas system. Any potential increase in demand as a result of the Proposed Action would be minor and would not be anticipated to exceed the current capacity.

Communications Systems. No short- or long-term, adverse, direct or indirect impacts on communication systems are anticipated. Communications infrastructure (e.g., fiber optic cable, telephone) would be developed in the newly constructed Fitness Center as part of the Proposed Action. There would be no significant increase in the use of communications systems, as the communication systems installed in the newly constructed Fitness Center would take the place of the communication systems in the demolished Fitness Center.

3.8.3.3 Alternative 1

Alternative 1 would have similar impacts as the Proposed Action. Alternative 1 would result in the use of many of the infrastructure and utility resources discussed above in **Section 3.9.2**; however, impacts from Alternative 1 would be negligible to minor, compared to the existing demand. Sustainable design measures would be used to reduce demand. Therefore, no long-term, adverse direct or indirect impacts on utilities and infrastructure are anticipated.

3.8.3.4 No Action Alternative

Under the No Action Alternative, the USAF would not construct a new Fitness Center and would continue to use existing fitness and recreational facilities on the installation; therefore, there would be no change in or impacts on utilities and infrastructure.

3.8.4 Environmental Protection Measures

Measure 1: Coordination and Permits. As part of the Proposed Action, the contractor would coordinate with local utility companies and the Base Civil Engineering staff at Beale AFB prior to commencement of any construction or demolition activities to determine the estimated location of utility installations, such as sewer, telephone, fuel, electric, water lines, or any other underground installations that reasonably can be expected to be encountered during excavation and trenching activities associated with the Proposed Action. Any permits required for excavation and trenching would be obtained prior to the commencement of construction or demolition activities.

3.9 Hazardous Materials and Wastes

3.9.1 Definition of Resource

Hazardous substances are defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that can cause an increase in mortality, a serious irreversible illness, or an incapacitating reversible illness; or pose a substantial threat to human health or the environment. CERCLA hazardous substances are found at Beale AFB in subsurface soil and groundwater due to past leaks or spills. The ERP is designed to identify, confirm, and clean up problems arising from past releases of hazardous substances and petroleum products into the environment.

Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA) as any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that poses a substantial present or potential hazard to human health or the environment. Hazardous wastes are collected at Beale AFB at a central accumulation area, from which they are transported to a licensed off-site disposal area for disposal in accordance with RCRA.

The Toxic Substance Control Act (TSCA) addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and LBP. Asbestos is found in building materials at older buildings at Beale AFB. ACM in these buildings can include asphaltic roofing material and roofing felt, acoustic ceiling materials (e.g., acoustic tiles), textured paints and stucco, plaster color coats and skim coats, asbestos-cement wallboard, vinyl asbestos floor tile and adhesives, pipe insulation, and other building materials. LBP is defined by TSCA as paint or other surface coatings that contain lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight which could pose a hazard by exposure to lead if released from accessible painted surfaces due to deterioration, friction, or impact (15 U.S.C. 2601).

3.9.2 Description of the Affected Environment

3.9.2.1 Environmental Restoration Program

The ERP at Beale AFB began in 1984 with an installation wide records search that identified 16 ERP sites for further investigation. Supplemental investigations beginning in the late 1980s and continuing to date brought the total number of Areas of Concern (AOCs) to 73 and ERP sites to 40. Primary contaminants in soil and water include fuels, oils, pesticides, herbicides, waste solvents, and inorganic compounds. Progress under the ERP is closely coordinated with various regulatory agencies, including the California Environmental Protection Agency Department of Toxic Substance Control and the CRWQCB (BAFB 2007).

The Proposed Action would overlap a portion of several ERP sites (see **Figure 3-3**). The primary constituents of concern at these ERP sites are hazardous substances in soil and groundwater, which include fuel oil and industrial solvents and their degradation products, such as trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichloroethene (DCE), carbon tetrachloride, and petroleum hydrocarbons. ERP site information relevant to the Proposed Action is described below.

ERP Site 22. ERP site 22 overlaps the entire Fitness Center site, including the buildings proposed for demolition. The ERP site boundaries encompass areas with petroleum USTs. An installation wide environmental survey estimated the number of USTs at Beale AFB at 1,089. From approximately 1993 to 1998, 37 locations with former USTs which had contained diesel fuel or fuel oil were removed from the Fitness Center site. Various contractors were hired to empty the tank contents and excavate the USTs and service lines. Soil samples were collected from the sides and bottom of the excavation and submitted for analysis of total petroleum hydrocarbons (TPH). The constituent of concern for diesel and fuel oil is the diesel fraction (TPH-D). In two of the excavations, TPH-D concentrations were above the 1,000 milligrams per kilogram (mg/kg) action level. Two methods were utilized in the UST removal program to remediate soil with TPH-D above the action level: (1) overexcavation of contaminated soils and treatment at a soil bioremediation cell or (2) bioventing *in situ* by burying vent piping in the excavation and extracting vapor-phase contaminants with a blower (Metcalf & Eddy 1998). The two UST sites at the proposed Beale AFB Fitness Center site were successfully remediated below actions levels. In October 1998, the California Regional Water Quality Board, Central Valley Region, issued a formal closure letter accepting the results of the Beale AFB tank closure reports and stating that no further action was appropriate for the UST sites (CRWQCB 1998).

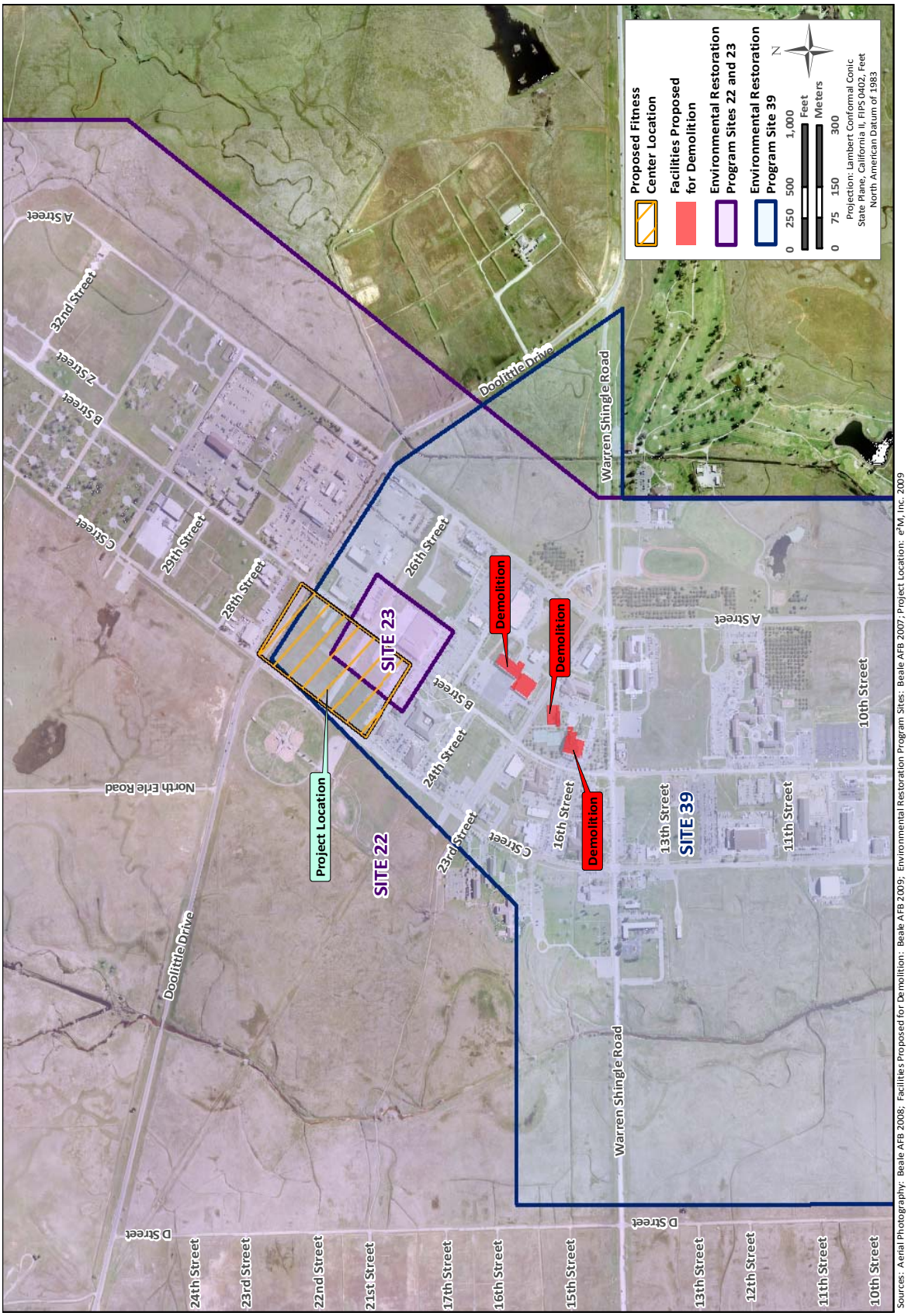

Figure 3-3. Environmental Restoration Program Sites in the Vicinity of the Proposed Action

ERP Site 23 and Solid Waste Management Unit (SWMU) 23. ERP site 23 overlaps the southwestern corner of the proposed Fitness Center site and lies north of the buildings proposed for demolition. ERP site 23 includes the former Ninth Transportation squadron refueling/maintenance shop installed in 1963. The maintenance shop building (Building 2470) had an oil/water separator (OWS) next to the shop for disposal of fuels. The OWS was found to have leaked fuels that were disposed of following vehicle maintenance operations. Soil and groundwater investigations identified the OWS as the primary contaminant source at ERP site 23. Both Building 2470 and the OWS have been removed. Most of the site is paved with asphalt or covered by concrete (CH2M Hill 2007a). Four potential contaminant source areas exist to the north of ERP site 23 including SWMU 23, a Hazardous-Waste Accumulation Area that is two blocks north of ERP site 23. The ERP site 23 characterization has been coordinated with activities at nearby SWMU 23 because contamination at SWMU 23 is likely the source of contamination observed at ERP site 23.

ERP site 23 is ranked as a Medium Risk Site. Constituents of concern in groundwater include TCE, PCE, and carbon tetrachloride. The depth to groundwater ranged from 4 to 38 feet below ground surface, as measured in August 2006, and flowed toward the southwest. PCE was discovered at a maximum concentration of 13.4 micrograms per liter (µg/L), and carbon tetrachloride was not detected above the investigation limit of 1.0 µg/L (CH2M Hill 2007b).

Figure 3-4 illustrates the extent of the contaminant plumes originating from SWMU 23. Two groundwater plumes exist to the east of the site within SWMU 23. A TCE plume extends approximately 500 feet southward from the source and to the west of the proposed Fitness Center site beneath the intersection of Doolittle Drive and A Street. TCE was detected at a maximum concentration of 198 µg/L near the source. A shallow PCE plume is shown migrating to the southwest, but does not extend into the proposed Fitness Center site. Concentrations in shallow groundwater are less than 30 µg/L at its greatest extent. Groundwater at ERP site 23 would be treated as part of the Cantonment Area that includes ERP sites 19, 23, 36, 39, and 40. A Remedial Investigation was planned to begin in 2007 (URS 2008).

DCE was detected in groundwater in 2003 in samples collected south of Doolittle Drive. The source is thought to be historic leaks from a sewer line at the northwestern corner of Doolittle Drive and B Street. This sewer might have received solvents released from the OWS upstream in SWMU 23; however, DCE was not detected in soil samples collected in 2007 at locations near the sewer line defects or in soil borings across the eastern half of the Fitness Center site. The extent of the DCE plume shown in **Figure 3-4** was estimated from soil vapor samples collected in the soil borings. Although groundwater data collected earlier indicate that a sewer line leak occurred upgradient of the Fitness Center site, more recent data suggest that the leaks were minimal and that only soil directly beneath the sewer pipe was affected. No further investigations are anticipated (URS 2008).

ERP Site 39. The boundaries of ERP site 39 overlap the proposed Fitness Center area and the buildings scheduled for demolition; however, the focus of the ERP investigation was Building 2145 (ACC Center Photographic Lab) located east of "C" Street between 10th and 12th Streets, and south of Buildings 2422, 2424, 2148 and 2159. Photo processing, painting, and fabrication are some of the activities that have been conducted in the Photographic Lab since 1959. Site characterization began in 1997 and volatile organic carbon compounds were detected in the soil gas and groundwater. PCBs were detected inside Building 2145 during investigations from 1998 to 2001 (BAFB 2007).

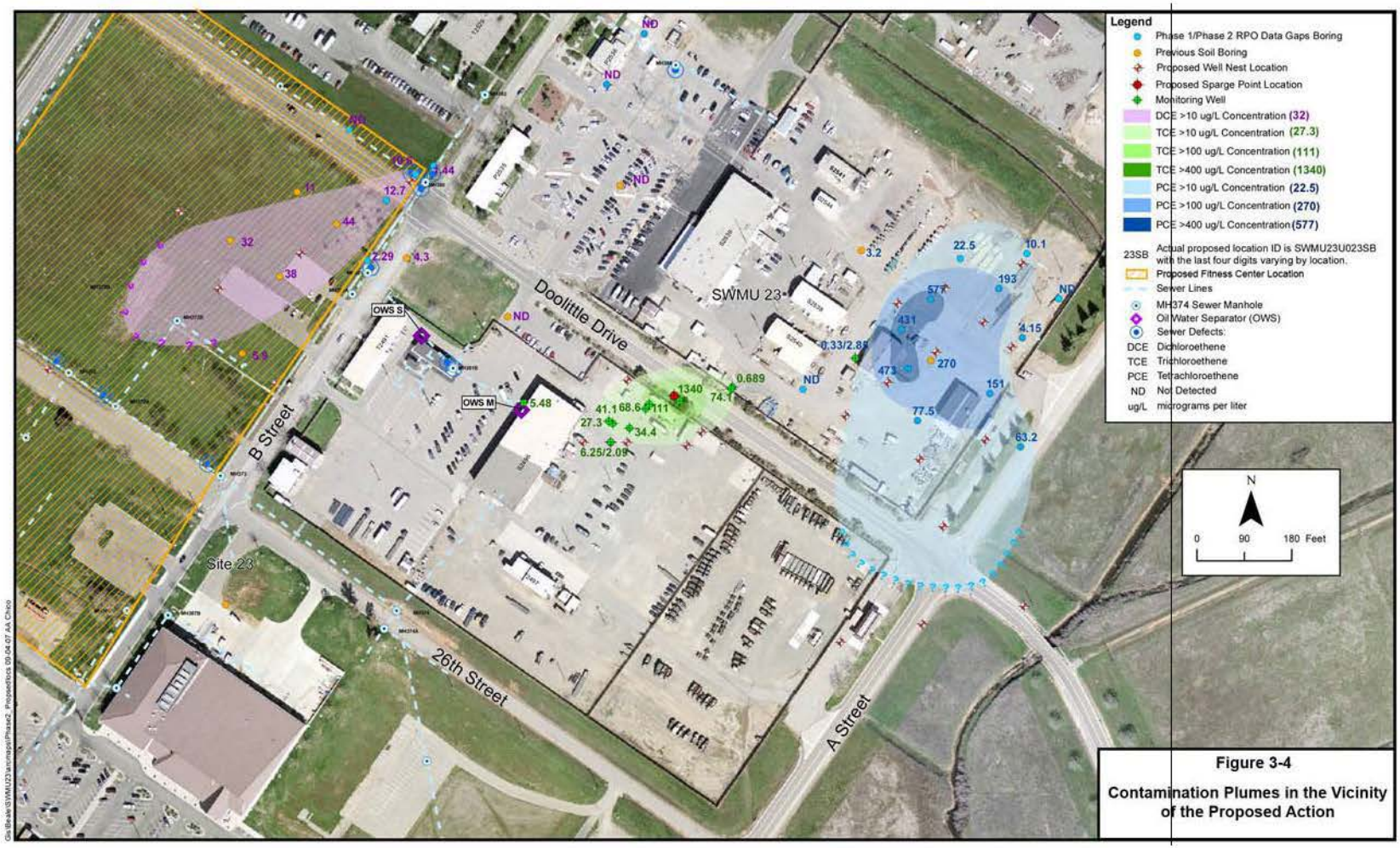

Figure 3-4. Contamination Plumes in the Vicinity of the Proposed Action

3.9.2.2 Hazardous Materials and Wastes

The Base Environmental Office is responsible for the hazardous material and waste plans for Beale AFB. In conformance with the policies established by Air Force Policy Directive 32-70, the Base Environmental Office has developed plans to manage hazardous materials, hazardous wastes, and special hazards on the installation. Installation and contractor personnel collect hazardous wastes at initial accumulation points. From the initial accumulation points, wastes are taken to the Centralized Accumulation Site on the installation and shipped to off-installation disposal facilities. In accordance with the Beale AFB Hazardous Waste Management Program, hazardous wastes are stored on-installation for a maximum of 75 days.

Building 2422, the pool house building adjacent to the existing Fitness Center, contains a 500-gallon chlorine storage tank and a chlorine room. The 500-gallon tank contains 12 percent liquid chlorine; the chlorine room contains 55-gallon drums of 12 percent liquid chlorine and 1-gallon containers of muriatic acid. The tanks, drums, and containers would be removed prior to demolition. Unless these chlorine products are recycled and used for their intended purpose, the liquid chlorine disinfectant and muriatic acid must be disposed of as hazardous waste under the regulatory requirements of RCRA.

3.9.2.3 Asbestos-Containing Materials and Lead-Based Paint

A survey of buildings at Beale AFB was performed to locate, identify, and evaluate any materials containing asbestos. ACM is removed on an as-needed basis to minimize health risks from release of asbestos fibers during normal activities, maintenance, renovation, or demolition. Components of the foundations, walls, and debris piles in the HAWC (Building 2459), the existing Fitness Center (Building 2418), the utility/storage facility adjacent to the existing Fitness Center (Building 2424), and the pool house (Building 2422) could contain ACM. Beale AFB has conducted a survey of buildings for the presence of LBP. The survey mainly focused on child-occupied facilities. The results of the survey are maintained in an LBP database at Civil Engineering.

3.9.3 Environmental Consequences

3.9.3.1 Evaluation Criteria

Impacts on the ERP would be considered significant if the Federal action disturbed (or created) contaminated sites resulting in adverse effects on human health or the environment. Environmental consequences associated with hazardous materials and waste would be significant if the storage, use, transportation, or disposal of these substances were to substantially increase the risk to human health and the environment. Impacts from ACM and LBP would be considered significant if OSHA standards were exceeded.

3.9.3.2 Proposed Action

Short-term, minor, adverse impacts to construction workers would occur from encountering hazardous materials and wastes due to construction and demolition activities. The Beale AFB ERP has identified areas where past disposal practices have created contamination of soil and groundwater. The construction of the Fitness Center would occur near an area of groundwater contamination originating from upgradient sources. Also, numerous USTs have been removed from the proposed site. Hazardous materials could be encountered during demolition activities. Any hazardous materials encountered or hazardous waste generated during construction and demolition activities must be handled in accordance with all appropriate environmental laws and regulations.

Environmental Restoration Program. Projects included in the Proposed Action are in the vicinity of active ERP sites, including ERP site 23 and SWMU 23. The Fitness Center site would overlap a portion of ERP site 23. The TCE and PCE groundwater plumes to the east of the Fitness Center site are not directly upgradient and do not appear to be migrating toward the site. The DCE plume identified with soil vapor samples from borings extends under the eastern half of the site; however, the low levels of DCE encountered would not be anticipated to pose a hazard to construction workers or produce vapor concentrations within an enclosed building space sufficient to adversely impact installation personnel.

Thirty-seven USTs at the Fitness Center site were removed from 1994 to 1998 and any soils contaminated with petroleum hydrocarbons to unacceptable levels have been excavated or remediated. No impacts are anticipated from site grading and excavation activities during construction of the Fitness Center; however, equipment operators and workers would be aware of the potential for uncovering residual contamination or buried objects. Further, the presence of fill in former tank locations within the Fitness Center improvement areas would be recognized in foundation design and planning.

The buildings scheduled for demolition are within ERP site 39. Demolition would not impact contamination in soil and groundwater found in and around Building 2145, south of the demolition sites.

Workers at the ERP sites listed above would either have OSHA 40-hour Hazardous Waste Operations and Emergency Response training, or a supervisor would have OSHA Site Supervisor certification. All site work would be conducted under an approved site-specific health and safety plan. Current site-specific information about contamination and ERP infrastructure on and around each project site would be obtained prior to trenching. Procedures for proper handling of contaminated soils discovered during site preparation and excavation would be prepared and implemented through a site-specific waste management plans. Project planning would include protection of ERP infrastructure such as monitoring wells, treatment systems, and conveyance pipes to avoid disruption of clean-up activities. Prior to the initiation of a project on any environmental restoration site a waiver must be submitted to Headquarters (HQ) ACC and Air Force Center for Engineering and the Environment (AFCEE) for approval.

Hazardous Materials and Waste. Construction activities associated with the Proposed Action would require the use of certain hazardous materials such as paints, welding gases, solvents, preservatives, and sealants. It is anticipated that the quantity of products containing hazardous materials used during the construction of the Proposed Action would be minimal and their use would be of short duration. The quantity of hazardous wastes generated from proposed construction activities would be minor and would not be expected to exceed the capacities of existing hazardous waste disposal facilities. The pool cleaning and disinfectant chemicals at Building 2422 would be recycled or properly disposed of as hazardous waste. Hazardous materials and wastes would be handled under the existing RCRA-compliant waste management programs at Beale AFB and, therefore, would not be expected to increase the risks of exposure to workers and installation personnel.

Asbestos-Containing Materials and Lead-Based Paint. It is anticipated that the demolition of Buildings 2418, 2422, 2422, and 2459 could generate ACM and LBP wastes. Any ACM or LBP encountered during building demolition and cleanup would be handled in accordance with established USAF policy, the *Asbestos Management Plan*, and the *Lead-Based Paint Management Plan*. USAF regulations prohibit the use of ACM and LBP for new construction. Specifications for new facilities would be in accordance with USAF policies and regulations.

Demolition plans would be reviewed by Beale AFB civil engineering personnel to ensure appropriate measures were taken to reduce potential exposure to, and release of, asbestos and lead from LBP. The Air Force would follow its current practices for removal of friable asbestos, other ACM, and LBP associated with these buildings. Friable ACM would be removed and disposed of at an

asbestos-permitted landfill. Because the Proposed Action might affect ACM and LBP at only four buildings at Beale AFB and existing handling procedures would ensure OSHA standards are not exceeded, impacts from the removal of ACM and LBP would be negligible.

3.9.3.3 Alternative 1

Short-term, minor, adverse impacts to construction workers would occur from encountering hazardous materials and wastes due to construction and demolition activities. Under Alternative 1, Beale AFB would conduct all of the actions described under the Proposed Action and would widen Doolittle Drive on either side by adding left- and right-hand turn lanes to the proposed Fitness Center. The construction would occur in the vicinity of the DCE plume. Construction would be coordinated with ERP personnel to ensure that the source area on the north side of the street is not disturbed. There would be negligible impacts on worker health and safety. All other actions for Alternative 1 would result in the same environmental consequences for restoration and hazardous materials and waste as the Proposed Action.

3.9.3.4 No Action Alternative

Under the No Action Alternative, there would be no soil disturbance at the proposed Fitness Center site and no risk of encountering hazardous substances. Buildings 2218, 2224, 2424, and 2459 would not be demolished; LBP on painted surfaces and ACM in building materials would not be disturbed. In general, there would be no change in or impacts on environmental restoration, hazardous materials and wastes at Beale AFB.

3.9.4 Environmental Protection Measures

Measure 1: Health and Safety Plan and ERP Waiver Coordination. Although there is a low likelihood for construction workers to be exposed to contamination from ERP sites during construction or demolition, it is recommended that a health and safety plan be prepared by the contractor in accordance with OSHA requirements prior to commencement of construction or demolition activities proximate to ERP sites. Should contamination be encountered, handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and Beale AFB programs and procedures. Workers at the ERP sites identified in this EA would either have OSHA 40-hour Hazardous Waste Operations and Emergency Response training, or a supervisor would have OSHA Site Supervisor certification. Current site-specific information about contamination, UST sites, and ERP infrastructure on and around each project site would be obtained prior to construction or burning and site-specific health and safety plans would be prepared. Project planning would include protection of ERP infrastructure such as monitoring wells, treatment systems, and conveyance pipes to avoid disruption of clean-up activities. Prior to the start of any construction involving an ERP site, a waiver request must be submitted to HQ ACC and AFCEE for approval.

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4. Cumulative and Other Effects

CEQ defines cumulative impacts as the "impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future. Reasonably foreseeable future actions consist of activities that have been approved and can be evaluated with respect to their effects.

This section briefly summarizes past, current, and reasonably foreseeable future projects within the geographic and time scope of the Proposed Action and alternatives. The past, current, and reasonably foreseeable projects, identified below, make up the cumulative impacts scenario for the Proposed Action and Alternative 1. The cumulative impacts scenario is then compared to the Proposed Action and Alternative 1's impacts on the individual resource areas analyzed in Section 3 to determine the cumulative impacts of the Proposed Action and Alternative 1. In accordance with CEQ guidance, the current effects of past actions are considered in aggregate as appropriate for each resource area without delving into the historical details of individual past actions.

4.1 Cumulative Effects

Past uses of areas surrounding Beale AFB have been primarily agricultural since the mid 1800s; resulting in few pristine aquatic resources left outside of base boundaries. Present and proposed construction projects near and adjacent to Beale AFB are described below.

The Yuba County Water Agency is currently constructing the Yuba Wheatland Canal that involves realignment and expansion of the Yuba County Water Agency Canal on a 206-acre site that runs along a portion of the western and southern boundaries of Beale AFB. The canal would cross four creeks, which are within the watersheds of the three main streams on the base: a tributary of Reed's Creek, Best Slough, and two channels of Hutchinson Creek. This project would have 5.9 acres of indirect impacts on vernal pools on the southern and western sides of the installation and a permanent loss of 17.32 acres of giant garter snake aquatic habitat south of the installation, in and around the streams mentioned above.

A Draft Environmental Impact Report was prepared for the Ostrom Road Quarry project in June 2008. The project is proposed to be constructed on a 315-acre site off Ostrom Road directly south of and adjoining the base boundary; this is just to the south of the base riparian restoration area. The proposed operation would consist of sand and gravel extraction on approximately 175 acres of the property for a period of 20 years, after which time the area would be reclaimed as farmland. Access bridges for the proposed project would cross Dry Creek and Best Slough south of the installation and would adversely affect jurisdictional waters of the United States and riparian vegetation that are present within these channels. These impacts are expected to be less than 0.3 acres and would likely be permitted under a Clean Water Act (CWA) Section 404 Nationwide permit. A formal wetland assessment has not been undertaken for the project, and there could be small areas of potentially jurisdictional wetlands present in the areas where gravel mining would occur.

The Pacific Wood Recycling facility has been proposed north of the installation boundary in an industrial area that is not expected to impact jurisdictional waters of the United States. The Best Slough Preserve is proposed to be constructed about 1 mile south of the installation boundary; the project would create

10 acres of vernal pools in an irrigated pasture. Several housing developments have been proposed near Beale AFB including the Yuba Highlands Specific Plan which includes more than 5,000 residential units to the north of Beale AFB. The Yuba Highlands Specific Plan was approved by the Yuba County Planning Commission; however, this Plan was rejected in a ballot initiative and would likely not occur as proposed within the near future. Recent downturns in residential housing construction would likely result in a decrease in the number of planned developments in the region.

Table 4-1 shows past, present, and future projects that have been completed or are planned at Beale AFB.

4.2 Cumulative Effects on Resource Areas

Table 4-2 summarizes potential cumulative effects on resources from the Proposed Action, when combined with other past, present, and future activities. No significant impacts on the environment would be anticipated from the Proposed Action in conjunction with past, present, and future activities.

4.3 Compatibility of Proposed Action and Alternatives with Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Impacts on the ground surface as a result of the Proposed Action would occur entirely within the boundaries of Beale AFB. Construction activities would not result in any significant or incompatible land use changes on- or off-installation. The proposed projects have been sited according to future land use zones. Consequently, construction activities would not be in conflict with future installation land use policies or objectives. The Proposed Action would not conflict with any applicable off-installation land use ordinances or designated clear zones.

4.4 Relationship Between Short-Term Uses of Man's Environment and Maintenance and Enhancement of Long-Term Productivity

Short-term uses of the biophysical components of the environment include direct construction-related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of the environment include those impacts occurring over a period of more than 5 years, including permanent resource loss. Several kinds of activities could result in short-term resource use that compromise long-term productivity. Filling of wetlands or loss of other especially important habitats and consumptive use of high-quality water at nonrenewable rates are examples of actions that affect long-term productivity.

The Proposed Action would not result in an intensification of land use at Beale AFB or in the surrounding area. Since the proposed construction activities would occur on previously disturbed installation land, biophysical components of the environment would not be impacted. In addition, since the Proposed Action would occur within the main installation cantonment areas, development of the Proposed Action would not represent a significant loss of open space.

4.5 Irreversible and Irretrievable Commitment of Resources

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the use of these resources would have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Table 4-1. Past, Present, and Future Projects at Beale AFB

Project	Timeframe	Description
JP-8 Line Access Road and Pit Repairs	2009 to 2011	The JP-8 Line Access Road and Pit Repairs project is to repair or replace 23 pits along the Beale AFB JP-8 pipeline. The project would also include the construction of an access road.
Land-Based Discharge	2009 to 2011	The Land-Based Discharge project is to install eight new wastewater cannons to discharge effluent from Beale AFB's wastewater treatment plant.
Replace Bridge 2627	2009 to 2011	The Replace Bridge 2627 project is to replace a failing bridge along North Earle Road that provides access to the Beale AFB M60 Range.
Antenna Installation	2009 to 2011	The Antenna Installation project is to install 6 new antennas at Beale AFB to support the mission currently housed at the Lincoln Receiver Site.
A Street Pond Expansion	2009 to 2011	The A Street Pond Expansion project is to increase the capacity of A Street Pond in order to hold more treated wastewater. Additionally, a pipeline would be constructed from A Street Pond to the Beale AFB softball fields to facilitate the land application of the additional wastewater.
Child Development Center (CDC)	2009 to 2011	The CDC project is to construct a large-size, 40,400-ft^2 CDC at a site on the main installation.
Military Family Housing (MFH) Water Main Replacement	2009 to 2001	The MFH Water Main Replacement project is to replace the 18-inch water mains that run from the B Street Water Storage Tank to the MFH storage tanks.
J Street Water Main Repair	2009 to 2011	The J Street Water Main Repair project is to replace water mains within the main installation along J Street.
AT/FP Gate Improvements	2009 to 2001	The AT/FP Gate Improvements project is to construct improvements to each of the installation's entry gates to meet AT/FP standards. This would include the installation of new pop-up barriers as well as cabling or 18-inch curbing.
Lightning Protection System (MUNS)	2009 to 2011	The Lightning Protection System project is to install lightning protection on all munitions storage igloos that do not currently have lightning protection (up to 10).
Construct Small Arms Range	2009 to 2001	The Small Arms Range construction project is to construct an outdoor, full-distance, non-contained small arms pop-up range. This would include a building for target storage and repair, utilities, restroom, and the pop-up range.
Base Perimeter Fencing, Phases III, V, VI	2009 to 2011	The base Perimeter Fencing Project is to construct a 7-foot-high chain-link fence with metal posts placed at 10-foot intervals set in concrete of appropriate depth around the installation perimeter.
Construct Secure Well Houses	2009 to 2011	The Construct Secure Well Houses project would include the construction of new pads, concrete well house structures, and security fencing around seven of nine wells in the installation well field.
Connect Contingency Water Well	2009 to 2011	The Connect Contingency Water Well project is to connect the current base contingency well to the installation water supply.

Table 4-2. Cumulative Effects on Resource Areas

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Air Quality	Past actions have resulted in the area being classified as being in nonattainment area for O_3 and PM_{10}.	Emissions from aircraft, vehicles, construction activities, and stationary equipment.	Emissions from construction and demolition activities would have short-term minor adverse impacts on local air quality and negligible impacts on regional air quality.	Emissions would be expected during soil removal, site grading, and construction activities.	Cumulative impacts would not be anticipated to be significant. The area is expected to be a continued moderate transitional nonattainment area for O_3 and PM_{10}. Actions would likely be *de minimus.* Impacts would not be anticipated to be significant.
Geologic Resources	Past Beale AFB development activity has resulted in short-term disturbances and long-term conversion of soils into areas of permanent development.	Modification of soils due to development.	Grading, excavating, and recountouring of the soil would result in short-term, minor, adverse impacts; however, implementation of BMPs would prevent long-term impacts (see **Table 2-2).**	Grading, excavating, and recountouring of the soil would result in further soil disturbance.	Impacts to soils would be permanent, but localized to specific areas of development. Cumulative impacts are not anticipated to be significant.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Water Resources	Surface water quality has been moderately impacted by development and agriculture. Waters of the United States have been impacted from past development and agriculture.	Minor surface water impairment due to construction activities.	Short-term, minor, adverse impacts would occur from potential sedimentation from construction activities and the minor increase in percentage of impervious surface area; however, long-term, adverse impacts would be prevented by adherence to BMPs (see **Table 2-2**). 0.41 acres of Waters of the United States would be impacted and replaced with equivalent waters on-site.	Construction activities would increase the potential for sedimentation. There would be a minor increase in the percentage of impervious surface area. There would be the permanent loss of waters of the United States.	Increased impervious area would have negligible impacts on storm water discharges and water quality. There would be permanent loss of waters of the United States. However, cumulative impacts would not be significant due to compensation and preservation measures.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Biological Resources	Habitat of sensitive and common wildlife and plant species have been impacted from development and use for agriculture.	Impacts to wildlife habitat and plants including wetlands, vernal pools, and riparian areas from construction and operations at Beale AFB. The Yuba Wheatland Canal project has impacts to vernal pools and giant garter snake habitat.	Construction would disturb approximately 14 acres of nonnative grassland communities; however, this would be negligible impact relative to the abundance of this type of community.	Construction would result in disturbance of vegetation. Construction and operations would result in direct, indirect, and temporary adverse impacts on threatened and endangered species. Some projects would adversely impact vernal pool species.	Construction would result in disturbance of vegetation. Construction and operations would result in direct, indirect, and temporary adverse impacts on threatened and endangered species. Some projects would adversely impact vernal pool species. However, cumulative effects would not be expected to be significant because of compensation and preservation measures.
Cultural Resources	No impacts to cultural resources have been recorded; however, there is the possibility of destruction of unknown artifacts during construction activities.	Identification and recordation of historic and cultural resources.	No indirect or direct adverse impacts on cultural resources would be expected.	Projects would impact ineligible sites and potentially eligible historic archaeological sites; however, impacts are not anticipated to be significant.	Projects would adversely impact ineligible sites and potentially eligible historic archaeological sites; however, cumulative impacts would not be anticipated to be significant.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Transportation	Traffic infrastructure has been constructed on installation, resulting in beneficial impacts on traffic circulation. There were short-term, adverse impacts on traffic circulation due to road and lane closures during construction activities.	Traffic infrastructure is maintained on the installation. Short-term, adverse impacts on traffic circulation due to road and lane closures during construction activities.	Short-term, adverse impacts on traffic circulation due to road and lane closures during construction activities.	Projects would result in short-term, adverse impacts on traffic circulation due to road and lane closures during construction activities.	Projects would result in short-term, adverse impacts on traffic circulation due to road and lane closures during construction activities; however, long-term and cumulative impacts would not be anticipated to be significant.
Safety	Short-term, minor adverse impacts occurred due to the slight increase in short-term risks associated with construction and demolition activities. Short-term, minor adverse impacts might have occurred due to munitions, UXO, and CAIS related materials below the ground surface that were encountered during construction and demolition activities.	Ongoing activities include identification and recordation of historic and active ranges.	Short-term, minor adverse impacts due to the potential slight increase in short-term risks associated with construction and demolition activities. No impacts from MMRP sites; however, there is still the possibility of inadvertent discovery of munitions, UXO, and CAIS related materials below the ground surface during construction and demolition activities.	Future projects would result in short-term, adverse impacts on construction workers from slight increase in short-term risks associated with construction and demolition activities.	Short-term, adverse impacts on construction workers from slight increase in short-term risks associated with construction and demolition activities; and potential discovery of MMRP, UXO, and CAIS related materials. However, no long-term or cumulative impacts would be expected.

Resource	Past Actions	Current Background Activities	Proposed Action	Known Future Actions	Cumulative Effects
Utilities and Infrastructure	Short-term demands were placed on water supply, sanitary sewer and wastewater systems, storm water systems, and liquid fuels supply.	Beale AFB utilizes on-installation utilities and infrastructure.	Short- and long-term, negligible to minor demands would be placed on water supply, sanitary sewer and wastewater systems, storm water systems, and liquid fuels supply.	Future projects would place additional short- and long-term demands on utilities and infrastructure at Beale AFB and generate short- and long-term negligible to minor impacts.	Short- and long-term demands would be placed on utilities and infrastructure at Beale AFB; however, no cumulative impacts would be expected.
Hazardous Materials and Hazardous Waste Management	Mission operations created hazardous materials and waste. Short-term, minor, adverse impacts have occurred from construction activities on ERP sites.	Mission operations create hazardous materials and waste. ERP sites are undergoing remediation efforts and construction projects occur within existing and closed ERP sites.	Short-term, minor, adverse impacts would occur from construction activities that would generate small amounts of hazardous materials and waste. Short-term, minor, adverse impacts might occur from construction activities on ERP sites.	Future projects would generate small amounts of hazardous materials and waste and generate short-term, minor, adverse impacts. Short-term, minor, adverse impacts might occur from construction activities on ERP sites.	There would be temporary increases in the generation of hazardous materials and waste; however, no cumulative impacts would be expected. Short-term, minor, adverse impacts might occur from construction activities on ERP sites.

The irreversible and irretrievable commitment of resources that would result from implementation of the Proposed Action involve the consumption of material resources used for construction, energy resources, biological resources, and human labor resources. The loss of these resources is considered to be permanent.

Material Resources. Material resources used for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads), and various material supplies (for infrastructure). Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (e.g., gasoline and diesel) and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operations, there would be a slight increase in the use of electricity. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Resources. Construction activities under the Proposed Action would result in a loss of approximately 14 acres of nonnative grassland vegetation. This community is both non-native and abundant and would not represent a loss of significant wildlife habitat. Therefore, no significant impacts would be expected.

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5. References

BAFB 2002 — Beale Air Force Base (BAFB). 2002. *Draft Final Habitat Conservation and Management Plan for Beale Air Force Base, California*. Prepared by Jones & Stokes. April 2002.

BAFB 2005a — BAFB. 2005. *Environmental Assessment Wing Infrastructure Development Outlook (WINDO) Implementation Plan (FY 04-06) Volume 1.* July 2005.

BAFB 2005b — BAFB. 2005. Beale Air Force Base, California. *Final 2005 Air Emissions Inventory Report*. December 2005.

BAFB 2005d — BAFB. 2005. Supporting Information for the Threatened and Endangered Species Work Plan. Attachment 2 from the Beale Air Force Base *Integrated Natural Resources Management Plan*.

BAFB 2007 — BAFB. 2007. *Environmental Restoration Program Site Summaries Beale Air Force Base, California*. December 2007.

BAFB 2008a — BAFB. 2008. *Beale Air Force Base General Plan*. September 2008.

BAFB 2008b — BAFB. 2008. 9th Reconnaissance Wing Beale AFB, California. *Integrated Cultural Resources Management Plan*. 1 March 2008.

BAFB 2008c — BAFB. 2008. 9th Reconnaissance Wing, Beale Air Force Base, California. *Integrated Natural Resources Management Plan*. January 2008.

CARB 2007 — California Air Resources Board (CARB). 2007. Area Designations/Map for California Ambient Air Quality Standards. Last updated July 26, 2007. Available online: <*http://www.arb.ca.gov/desig/adm/adm.htm*>. Accessed 9 February 2009.

CARB 2008 — CARB. 2008. California Ambient Air Quality Standards. Available online: <*http://www.arb.ca.gov/research/aaqs/aaqs2.pdf*>. Last updated November 17, 2008. Accessed 27 March 2009.

CEC 2006 — California Energy Commission (CEC). 2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004*. Available online: < *http://www.energy.ca.gov/2006publications/CEC-600-2006-013/CEC-600-2006-013-SF.PDF* >. Accessed 27 March 2009.

CH2M Hill 2007a — CH2M Hill. 2007. *Environmental Restoration Program Basewide Groundwater Monitoring Program 2006 Annual Report, Beale Air Force Base*. February 2007.

CH2M Hill 2007b — CH2M Hill. 2007. *Environmental Restoration Program First Quarter 2007 Basewide Progress Report, Beale Air Force Base*. May 2007.

CRWQCB 1998 — California Regional Water Quality Control Board (CRWQCB). 1998. Underground Storage Tank Closure Letter to Beale AFB. 13 October 1998.

e²M 2009 — engineering-environmental Management (e²M). 2009. Biological Survey Report for the Environmental Assessment Addressing Construction of a Fitness Center at Beale Air Force Base, California.

Eriksen et al. 1999 — Eriksen, Clyde H., and Denton Belk. 1999. Fairy Shrimp of California's Puddles, Pools, and Playas.

Evans 2009	Rebecca Evans (9 CES/CEAO). 2009. Verbal communications with Ms. Evans regarding jurisdictional waters of the United States and wetlands and LiDAR data. 1 April 2009.
FRAQMD 2009	Feather River Air Quality Management District (FRAQMD). 2009. FRAQMD Significance Thresholds. <*http://www.fraqmd.org/CEQA_Thresholds.htm*>. Accessed 2 June 2009.
Helm 1998	Helm, Brent P. 1998. Biogeography of Eight Large Branchiopods Endemic to California. Ecology, Conservation and Management of Vernal Pool Ecosystems-Proceedings from a 1996 Conference. California Native Plant Society. Available online: <http://www.cnps.org/vernalpools/helm.pdf>. Accessed 21 October 2003.
Metcalf & Eddy 1998	Metcalf & Eddy. 1998. *Beale Air Force Base UST Removal Program, Tank Closure Reports, June 1994-April 1998*. 1998.
NRCS 2009	Natural Resource Conservation Service (NRCS). 2009. Web Soil Survey. Available online: <*http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.*> Accessed 17 April 2009.
Sawyer and Keeler-Wolf 1995	Sawyer, J.O. and Todd Keeler-Wolf. 1995. A Manual of California Vegetation. California Native Plant Society Press: Sacramento, CA.
URS 2008	URS. 2008. *Solid Waste Management Unit 23Remedial Process Optimization Data Gaps Investigation, Informal Technical Information Report, Beale Air Force Base*. March 2008
USAF 1996	United States Air Force (USAF). 1996. *Air Force Handbook 32-1084*. Civil Engineering, Facility Requirements. 1 September 1996.
USAF 2005	USAF. 2005. Air Force Service Agency. *Air Force Services Facilities Design Guide, Design: Fitness Centers.* December 30, 2005. Available online: <*http://www.wbdg.org/ccb/browse_cat.php?o=33&c=129*>. Accessed March 27, 2009.
USAF 2006	USAF. 2006. *Air Force Instruction 10-248, Operations, Fitness Program*. 25 September 2006.
USEPA 2008	U.S. Environmental Protection Agency (USEPA). 2008. National Ambient Air Quality Standards (NAAQS), Air and Radiation. Last updated 17 December 2008. Available online: <*http://www.epa.gov/air/criteria.html*>. Accessed March 27, 2009.
USEPA 2009a	USEPA. 2009. *The Green Book Nonattainment Areas for Criteria Pollutants.* Current as of February 19, 2009. Available online: <*http://www.epa.gov/air/oaqps/greenbk/anay.html*>. Accessed 27 March 2009.
USEPA 2009b	USEPA. 2009. Mandatory Class I Areas Map. Available online: <*http://epa.gov/ttn/oarpg/t1/fr_notices/classimp.gif*>. Accessed 13 March 2009.

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APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

Appendix A

Applicable Laws, Regulations, Policies, and Planning Criteria

When considering the affected environment, the various physical, biological, economic, and social environmental factors must be considered. In addition to the National Environmental Policy Act (NEPA), there are other environmental laws as well as Executive Orders (EOs) to be considered when preparing environmental analyses. These laws are summarized below.

NOTE: This is not a complete list of all applicable laws, regulations, policies, and planning criteria potentially applicable to documents, however, it does provide a general summary for use as a reference.

Airspace

Airspace management in the U.S. Air Force (USAF) is guided by Air Force Instruction (AFI) 13-201, *Air Force Airspace Management*. This AFI provides guidance and procedures for developing and processing special use airspace. It covers aeronautical matters governing the efficient planning, acquisition, use, and management of airspace required to support USAF flight operations. It applies to activities that have operational or administrative responsibility for using airspace and establishes practices to decrease disturbances from flight operations that might cause adverse public reaction and provides flying unit commanders with general guidance for dealing with local problems.

Noise

The Air Installation Compatible Use Zone (AICUZ) Program, (AFI 32-7063), provides guidance to air bases and local communities in planning land uses compatible with airfield operations. The AICUZ program describes existing aircraft noise and flight safety zones on and near USAF installations.

Land Use

Land use planning in the USAF is guided by *Land Use Planning Bulletin, Base Comprehensive Planning* (HQ USAF/LEEVX, August 1, 1986). This document provides for the use of 12 basic land use types found on a USAF installation. In addition, land use guidelines established by the U.S. Department of Housing and Urban Development and based on findings of the Federal Interagency Committee on Noise are used to recommend acceptable levels of noise exposure for land use.

Air Quality

The Clean Air Act (CAA) of 1970, and Amendments of 1977 and 1990, recognizes that increases in air pollution result in danger to public health and welfare. To protect and enhance the quality of the Nation's air resources, the CAA authorizes the U.S. Environmental Protection Agency (USEPA) to set six National Ambient Air Quality Standards (NAAQSs) which regulate carbon monoxide, lead, nitrogen dioxide, ozone, sulfur dioxide, and particulate matter pollution emissions. The CAA seeks to reduce or eliminate the creation of pollutants at their source, and designates this responsibility to state and local governments. States are directed to utilize financial and technical assistance as well as leadership from the Federal government to develop implementation plans to achieve NAAQS. Geographic areas are officially designated by the USEPA as being in attainment or nonattainment to pollutants in relation to their compliance with NAAQS. Geographic regions established for air quality planning purposes are designated as Air Quality Control Regions (AQCR). Pollutant concentration levels are measured at

designated monitoring stations within the AQCR. An area with insufficient monitoring data is designated as unclassifiable. Section 309 of the CAA authorizes USEPA to review and comment on impact statements prepared by other agencies.

An agency should consider what impact an action might have on NAAQS due to short-term increases in air pollution during construction as well as long-term increases resulting from changes in traffic patterns. For actions in attainment areas, a Federal agency could also be subject to USEPA's Prevention of Significant Deterioration (PSD) regulations. These regulations apply to new major stationary sources and modifications to such sources. Although few agency facilities will actually emit pollutants, increases in pollution can result from a change in traffic patterns or volume. Section 118 of the CAA waives Federal immunity from complying with the CAA and states all Federal agencies will comply with all Federal- and state-approved requirements.

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan. More specifically, CAA conformity is ensured when a Federal action does not cause a new violation of the NAAQS, contribute to an increase in the frequency or severity of violations of NAAQS, or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

The General Conformity Rule applies only to actions in nonattainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to Federal actions that are considered "regionally significant" or where the total emissions from the action meet or exceed the *de minimis* thresholds presented in 40 Code of Federal Regulations (CFR) 93.153. An action is regionally significant when the total nonattainment pollutant emissions exceed 10 percent of the AQCR's total emissions inventory for that nonattainment pollutant. If a Federal action does not meet or exceed the *de minimis* thresholds and is not considered regionally significant, then a full Conformity Determination is not required.

Safety

AFI 91-202, *USAF Mishap Prevention Program*, implements Air Force Policy Directive (AFPD) 91-2, *Safety Programs*. It establishes mishap prevention program requirements (including the Bird/Wildlife Aircraft Strike Hazard [BASH] Program), assigns responsibilities for program elements, and contains program management information. This instruction applies to all USAF personnel.

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health* (AFOSH) Program, implements AFPD 91-3, *Occupational Safety and Health,* by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program, these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities.

Geological Resources

Recognizing that millions of acres per year of prime farmland are lost to development, Congress passed the Farmland Protection Policy Act to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland (7 CFR Part 658). Prime farmland are soils that have a combination of soil and landscape properties that make them highly suitable for cropland, such as high inherent fertility, good water-holding capacity, deep or thick effective rooting zones, and are not subject to periodic flooding. Under the Farmland Protection Policy Act, agencies are encouraged to conserve prime or unique farmlands when alternatives are practicable. Some activities that are not subject

to the Farmland Protection Policy Act include Federal permitting and licensing, projects on land already in urban development or used for water storage, construction for national defense purposes, or construction of new minor secondary structures such as a garage or storage shed.

Water Resources

The Clean Water Act (CWA) of 1977 is an amendment to the Federal Water Pollution Control Act of 1972, is administered by USEPA, and sets the basic structure for regulating discharges of pollutants into United States waters. The CWA requires USEPA to establish water quality standards for specified contaminants in surface waters and forbids the discharge of pollutants from a point source into navigable waters without a National Pollutant Discharge Elimination System (NPDES) permit. NPDES permits are issued by USEPA or the appropriate state if it has assumed responsibility. Section 404 of the CWA establishes a Federal program to regulate the discharge of dredge and fill material into waters of the United States. Section 404 permits are issued by the USACE. Waters of the United States include interstate and intrastate lakes, rivers, streams, and wetlands that are used for commerce, recreation, industry, sources of fish, and other purposes. The objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Each agency should consider the impacts on water quality from actions such as the discharge of dredge or fill material into United States waters from construction, or the discharge of pollutants as a result of facility occupation.

Section 303(d) of the CWA requires states and USEPA to identify waters not meeting state water-quality standards and to develop total maximum daily loads (TMDLs). TMDL is the maximum amount of a pollutant that a waterbody can receive and still be in compliance with state water-quality standards. After determining TMDLs for impaired waters, states are required to identify all point and nonpoint sources of pollution in a watershed that are contributing to the impairment and to develop an implementation plan that will allocate reductions to each source to meet the state standards. The TMDL program is currently the Nation's most comprehensive attempt to restore and improve water quality. The TMDL program does not explicitly require the protection of riparian areas. However, implementation of the TMDL plans typically calls for restoration of riparian areas as one of the required management measures for achieving reductions in nonpoint source pollutant loadings.

The Coastal Zone Management Act (CZMA) of 1972 declares a national policy to preserve, protect, and develop, and, where possible, restore or enhance the resources of the Nation's coastal zone. The coastal zone refers to the coastal waters and the adjacent shorelines including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches, and includes the Great Lakes. The CZMA encourages states to exercise their full authority over the coastal zone, through the development of land and water use programs in cooperation with Federal and local governments. States may apply for grants to help develop and implement management programs to achieve wise use of the land and water resources of the coastal zone. Development projects affecting land or water use or natural resources of a coastal zone, must ensure the project is, to the maximum extent practicable, consistent with the state's coastal zone management program.

The Safe Drinking Water Act (SDWA) of 1974 establishes a Federal program to monitor and increase the safety of all commercially and publicly supplied drinking water. Congress amended the SDWA in 1986, mandating dramatic changes in nationwide safeguards for drinking water and establishing new Federal enforcement responsibility on the part of USEPA. The 1986 amendments to the SDWA require USEPA to establish Maximum Contaminant Levels (MCLs), Maximum Contaminant Level Goals (MCLGs), and Best Available Technology (BAT) treatment techniques for organic, inorganic, radioactive, and microbial contaminants; and turbidity. MCLGs are maximum concentrations below which no negative human health effects are known to exist. The 1996 amendments set current Federal MCLs, MCLGs, and BATs for organic, inorganic, microbiological, and radiological contaminants in public drinking water supplies.

EO 11988, *Floodplain Management* (May 24, 1977), directs agencies to consider alternatives to avoid adverse impacts and incompatible development in floodplains. An agency may locate a facility in a floodplain if the head of the agency finds there is no practicable alternative. If it is found there is no practicable alternative, the agency must minimize potential harm to the floodplain, and circulate a notice explaining why the action is to be located in the floodplain prior to taking action. Finally, new construction in a floodplain must apply accepted flood proofing and flood protection to include elevating structures above the base flood level rather than filling in land.

Biological Resources

The Endangered Species Act (ESA) of 1973 establishes a Federal program to conserve, protect, and restore threatened and endangered plants and animals and their habitats. The ESA specifically charges Federal agencies with the responsibility of using their authority to conserve threatened and endangered species. All Federal agencies must ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction of Critical Habitat for these species, unless the agency has been granted an exemption. The Secretary of the Interior, using the best available scientific data, determines which species are officially endangered or threatened, and the U.S. Fish and Wildlife Service (USFWS) maintain the list. A list of Federal endangered species can be obtained from the Endangered Species Division, USFWS (703-358-2171). States might also have their own lists of threatened and endangered species which can be obtained by calling the appropriate State Fish and Wildlife office. Some species, such as the bald eagle, also have laws specifically for their protection (e.g., Bald Eagle Protection Act).

The Migratory Bird Treaty Act (MBTA) of 1918, as amended, implements treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to pursue, hunt, take, capture, or kill; attempt to take, capture or kill; possess, offer to or sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. The MBTA also makes it unlawful to ship, transport or carry from one state, territory, or district to another, or through a foreign country, any bird, part, nest, or egg that was captured, killed, taken, shipped, transported, or carried contrary to the laws from where it was obtained; and import from Canada any bird, part, nest, or egg obtained contrary to the laws of the province from which it was obtained. The U.S. Department of the Interior has authority to arrest, with or without a warrant, a person violating the MBTA.

EO 11514, *Protection and Enhancement of Environmental Quality* (March 5, 1970), states that the President, with assistance from the Council on Environmental Quality (CEQ), will lead a national effort to provide leadership in protecting and enhancing the environment for the purpose of sustaining and enriching human life. Federal agencies are directed to meet national environmental goals through their policies, programs, and plans. Agencies should also continually monitor and evaluate their activities to protect and enhance the quality of the environment. Consistent with NEPA, agencies are directed to share information about existing or potential environmental problems with all interested parties, including the public, in order to obtain their views.

EO 11990, *Protection of Wetlands* (May 24, 1977), directs agencies to consider alternatives to avoid adverse impacts and incompatible development in wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland. Agencies should use economic and environmental data, agency mission statements, and any other pertinent information when deciding whether or not to build in wetlands. EO 11990 directs each agency to provide for early public review of plans for construction in wetlands.

EO 13186, *Conservation of Migratory Birds* (January 10, 2001), creates a more comprehensive strategy for the conservation of migratory birds by the Federal government. EO 13186 provides a specific framework for the Federal government's compliance with its treaty obligations to Canada, Mexico, Russia, and Japan. EO 13186 provides broad guidelines on conservation responsibilities and requires the development of more detailed guidance in a memorandum of understanding (MOU). EO 13186 will be coordinated and implemented by the USFWS. The MOU will outline how Federal agencies will promote conservation of migratory birds. EO 13186 requires the support of various conservation planning efforts already in progress; incorporation of bird conservation considerations into agency planning, including NEPA analyses; and reporting annually on the level of take of migratory birds.

Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 sets forth national policy to identify and preserve properties of state, local, and national significance. The NHPA establishes the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officers (SHPOs), and the NRHP. ACHP advises the President, Congress, and Federal agencies on historic preservation issues. Section 106 of the NHPA directs Federal agencies to take into account impacts of their undertakings (actions and authorizations) on properties included in or eligible for the NRHP. Section 110 sets inventory, nomination, protection, and preservation responsibilities for federally owned cultural properties. Section 106 of the act is implemented by regulations of the ACHP, 36 CFR Part 800. Agencies should coordinate studies and documents prepared under Section 106 with NEPA where appropriate. However, NEPA and NHPA are separate statutes and compliance with one does not constitute compliance with the other. For example, actions which qualify for a categorical exclusion under NEPA might still require Section 106 review under NHPA. It is the responsibility of the agency official to identify properties in the area of potential impacts, and whether they are included or eligible for inclusion in the NRHP. Section 110 of the NHPA requires Federal agencies to identify, evaluate, and nominate historic property under agency control to the NRHP.

The Archaeological Resource Protection Act (ARPA) of 1979 protects archaeological resources on public and American Indian lands. It provides felony-level penalties for the unauthorized excavation, removal, damage, alteration, or defacement of any archaeological resource, defined as material remains of past human life or activities which are at least 100 years old. Before archaeological resources are excavated or removed from public lands, the Federal land manager must issue a permit detailing the time, scope, location, and specific purpose of the proposed work. ARPA also fosters the exchange of information about archaeological resources between governmental agencies, the professional archaeological community, and private individuals. ARPA is implemented by regulations found in 43 CFR Part 7.

The Native American Graves Protection and Repatriation Act of 1990 establishes rights of American Indian tribes to claim ownership of certain "cultural items," defined as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, held or controlled by Federal agencies. Cultural items discovered on Federal or tribal lands are, in order of primacy, the property of lineal descendants, if these can be determined, and then the tribe owning the land where the items were discovered or the tribe with the closest cultural affiliation with the items. Discoveries of cultural items on Federal or tribal land must be reported to the appropriate American Indian tribe and the Federal agency with jurisdiction over the land. If the discovery is made as a result of a land use, activity in the area must stop and the items must be protected pending the outcome of consultation with the affiliated tribe.

EO 11593, *Protection and Enhancement of the Cultural Environment* (May 13, 1971), directs the Federal government to provide leadership in the preservation, restoration, and maintenance of the historic and cultural environment. Federal agencies are required to locate and evaluate all Federal sites under their jurisdiction or control which might qualify for listing on the NRHP. Agencies must allow the ACHP to

comment on the alteration, demolition, sale, or transfer of property which is likely to meet the criteria for listing as determined by the Secretary of the Interior in consultation with the SHPO. Agencies must also initiate procedures to maintain federally owned sites listed on the NRHP.

The American Indian Religious Freedom Act of 1978 and Amendments of 1994 recognize that freedom of religion for all people is an inherent right, and traditional American Indian religions are an indispensable and irreplaceable part of Indian life. It also recognized the lack of Federal policy on this issue and made it the policy of the United States to protect and preserve the inherent right of religious freedom for Native Americans. The 1994 Amendments provide clear legal protection for the religious use of peyote cactus as a religious sacrament. Federal agencies are responsible for evaluating their actions and policies to determine if changes should be made to protect and preserve the religious cultural rights and practices of Native Americans. These evaluations must be made in consultation with native traditional religious leaders.

EO 13007, *Indian Sacred Sites* (May 24, 1996), provides that agencies managing Federal lands, to the extent practicable, permitted by law, and not inconsistent with agency functions, shall accommodate American Indian religious practitioners' access to and ceremonial use of American Indian sacred sites, shall avoid adversely affecting the physical integrity of such sites, and shall maintain the confidentiality of such sites. Federal agencies are responsible for informing tribes of proposed actions that could restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites.

EO 13287, *Preserve America* (March 3, 2003), orders Federal agencies to take a leadership role in protection, enhancement, and contemporary use of historic properties owned by the Federal government, and promote intergovernmental cooperation and partnerships for preservation and use of historic properties. EO 13287 established new accountability for agencies with respect to inventories and stewardship.

Socioeconomics and Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (February 11, 1994), directs Federal agencies to make achieving environmental justice part of their mission. Agencies must identify and address the adverse human health or environmental impacts that its activities have on minority and low-income populations and develop agency wide environmental justice strategies. The strategy must list "programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations, ensure greater public participation, improve research and data collection relating to the health of and environment of minority populations and low-income populations, and identify differential patterns of consumption of natural resources among minority populations and low-income populations." A copy of the strategy and progress reports must be provided to the Federal Working Group on Environmental Justice. Responsibility for compliance with EO 12898 is with each Federal agency.

Hazardous Materials and Waste

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 authorizes USEPA to respond to spills and other releases of hazardous substances to the environment, and authorizes the National Oil and Hazardous Substances Pollution Contingency Plan. CERCLA also provides a Federal "Superfund" to respond to emergencies immediately. Although the "Superfund" provides funds for cleanup of sites where potentially responsible parties cannot be identified, USEPA is

authorized to recover funds through damages collected from responsible parties. This funding process places the economic burden for cleanup on polluters.

The Pollution Prevention Act of 1990 encourages manufacturers to avoid the generation of pollution by modifying equipment and processes, redesigning products, substituting raw materials, and making improvements in management techniques, training, and inventory control. Consistent with pollution prevention principles, EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management* (January 24, 2007 [revoking EO 13148]) sets a goal for all Federal agencies that promotes environmental practices, including acquisition of biobased, environmentally preferable, energy-efficient, water-efficient, and recycled-content products, and use of paper of at least 30 percent post-consumer fiber content. In addition, EO 13423 sets a goal that requires Federal agencies to ensure that they reduce the quantity of toxic and hazardous chemicals and materials acquired, used, or disposed of, increase diversion of solid waste as appropriate, and maintain cost effective waste prevention and recycling programs in their facilities. Additionally, in *Federal Register* Volume 58 Number 18 (January 29, 1993), CEQ provides guidance to Federal agencies on how to "incorporate pollution prevention principles, techniques, and mechanisms into their planning and decisionmaking processes and to evaluate and report those efforts, as appropriate, in documents pursuant to NEPA."

The Resource Conservation and Recovery Act (RCRA) of 1976 is an amendment to the Solid Waste Disposal Act. RCRA authorizes USEPA to provide for "cradle-to-grave" management of hazardous waste and sets a framework for the management of nonhazardous municipal solid waste. Under RCRA, hazardous waste is controlled from generation to disposal through tracking and permitting systems, and restrictions and controls on the placement of waste on or into the land. Under RCRA, a waste is defined as hazardous if it is ignitable, corrosive, reactive, toxic, or listed by USEPA as being hazardous. With the Hazardous and Solid Waste Amendments (HSWA) of 1984, Congress targeted stricter standards for waste disposal and encouraged pollution prevention by prohibiting the land disposal of particular wastes. The HSWA amendments strengthen control of both hazardous and nonhazardous waste and emphasize the prevention of pollution of groundwater.

The Superfund Amendments and Reauthorization Act (SARA) of 1986 mandates strong clean-up standards and authorizes USEPA to use a variety of incentives to encourage settlements. Title III of SARA authorizes the Emergency Planning and Community Right to Know Act, which requires facility operators with "hazardous substances" or "extremely hazardous substances" to prepare comprehensive emergency plans and to report accidental releases. If a Federal agency acquires a contaminated site, it can be held liable for cleanup as the property owner/operator. A Federal agency can also incur liability if it leases a property, as the courts have found lessees liable as "owners." However, if the agency exercises due diligence by conducting a Phase I Environmental Site Assessment, it can claim the "innocent purchaser" defense under CERCLA. According to Title 42 United States Code (U.S.C.) 9601(35), the current owner/operator must show it undertook "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" before buying the property to use this defense.

The Toxic Substance Control Act (TSCA) of 1976 consists of four titles. Title I established requirements and authorities to identify and control toxic chemical hazards to human health and the environment. TSCA authorized USEPA to gather information on chemical risks, require companies to test chemicals for toxic effects, and regulate chemicals with unreasonable risk. TSCA also singled out polychlorinated biphenyls (PCBs) for regulation, and, as a result, PCBs are being phased out. PCBs are persistent when released into the environment and accumulate in the tissues of living organisms. They have been shown to cause adverse health effects on laboratory animals and could cause adverse health effects in humans. TSCA and its regulations govern the manufacture, processing, distribution, use, marking, storage, disposal, clean-up, and release reporting requirements for numerous chemicals like PCBs. TSCA Title II

provides statutory framework for "Asbestos Hazard Emergency Response," which applies only to schools. TSCA Title III, "Indoor Radon Abatement," states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. TSCA Title IV, "Lead Exposure Reduction," directs Federal agencies to "conduct a comprehensive program to promote safe, effective, and affordable monitoring, detection, and abatement of LBP and other lead exposure hazards." Further, any Federal agency having jurisdiction over a property or facility must comply with all Federal, state, interstate, and local requirements concerning LBP.

APPENDIX B

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP) AND NOTICE OF AVAILABILITY (NOA)

Appendix B

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) and Notice of Availability (NOA)

DISTRIBUTION LIST AND REGULATORY AGENCY COMMENTS FOR THE DRAFT EA AND FONSI

The Draft EA and FONSI were made available to the regulatory agencies listed below for a 30-day review period. Comments received during the IICEP review period are included below.

U.S. Army Corps of Engineers
Attention: Ms. Nancy Haley
Regulatory Branch
1325 J St. Room 1480
Sacramento, CA 95814-2922

Regional Water Quality Control Board
Attention: Mr. Robert Solecki
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, California 95670-6114

Feather River Air Quality Management District Planning
Attention: Ms. Sondra Andersson
938 14th Street, Suite 275
Marysville, California 95901-4149

FEATHER RIVER AIR QUALITY MANAGEMENT DISTRICT
Serving Sutter and Yuba Counties

1007 Live Oak Blvd. Suite B-3
Yuba City, CA 95991
(530) **634-7659**
FAX (530) **634-7660**
www.fraqmd.org

David A. Valler, Jr.
Air Pollution Control Officer

August 24, 2009

Ms. Rebecca Evans
9 CES/CEAO
6601 B Street
Beale AFB, CA 95903

RE: ENVIRONMENTAL ASSESSMENT (EA) FOR FITNESS CENTER AT BEALE AFB.

Dear Ms. Evans,

Feather River Air Quality Management District (District) appreciates the opportunity to review and comment on the above referenced project. The District has the following comments:

- Section 3.1 of the draft EA does not address indirect source emissions or area source emissions from the operational phase of the project. The URBEMIS report included as Appendix C lists the operational emissions, however section 3.1 Air Quality does not address them. The district recommends including indirect and area source emissions along with the natural gas boiler discussion under section *Operational Emissions* on page 3-6.
- The mitigation measures applied in the Air Quality Emission Estimates in URBEMIS as presented in Appendix C should be included as mitigation measures. The district recommends adding the mitigation measures to Section 3.1.4 under *Measure 1: Fugitive Dust Control*, and *Measure 2: Construction Equipment Emission Controls.*
- The measure to reduce emissions of oxides of nitrogen and particulate matter by use of aqueous diesel fuel in no longer practical in California. The supply of aqueous diesel fuel has become very limited in this area. The district recommends removing this mitigation measure, or providing the district evidence that the project has adequate supply of aqueous diesel fuel to achieve the emission reductions credited in the Air Quality Emission Estimates in Appendix C.

District staff are available to assist the Lead Agency and Project Proponent as needed. Please call (530) 634-7659 ext 210 for assistance.

Sincerely,

Sondra Andersson
Air Quality Planner

Enclosures: None

Cc: file

The Draft EA and FONSI were made available to the public for a 30-day review period. The NOA was published on 24 July 2009 in the Marysville *Appeal-Democrat* and on the Beale AFB Public Affairs website.

PUBLIC NOTICE
Notice of Availability

DRAFT ENVIRONMENTAL ASSESSMENT (EA) ADDRESSING CONSTRUCTION OF A FITNESS CENTER AT BEALE AIR FORCE BASE, CALIFORNIA

The U.S. Air Force (USAF) at Beale Air Force Base (AFB), California, proposes to construct a Fitness Center and demolish four inadequate and substandard recreational facilities. The objective of the EA that has been prepared to address this Proposed Action is to disclose and analyze potentially significant environmental impacts. In accordance with the National Environmental Policy Act, the USAF has prepared this EA and now is making this environmental documentation available to the public for review.

The review period for this EA is thirty (30) days. The document will be available for review at the Beale AFB Environmental Office for 30 days from the date of this publication. Copies can also be obtained by calling (530) 634-2665 or by mailing a request to 9 CES/CEAO, 6601 B Street, Beale AFB, CA 95903, Attn: Ms. Rebecca Evans.

Beale AFB draft environmental assessment for construction of fitness center

Posted 7/24/2009 Updated 7/24/2009 Email story Print story

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from Beale AFB enviromental office

7/24/2009 - **BEALE AIR FORCE BASE, Calif, -- PUBLIC NOTICE OF AVAILABILITY DRAFT ENVIRONMENTAL ASSESSMENT (EA) ADDRESSING CONSTRUCTION OF A FITNESS CENTER AT BEALE AIR FORCE BASE, CALIF.**

The U.S. Air Force at Beale Air Force Base Calif., proposes to construct a Fitness Center and demolish four inadequate and substandard recreational facilities. The objective of the EA that has been prepared to address this proposed action is to disclose and analyze potentially significant environmental impacts. In accordance with the National Environmental Policy Act, the USAF has prepared this EA and now is making this environmental documentation available to the public for review.

The review period for this EA is 30 days. The document will be available for review at the Beale AFB Environmental Office for 30 days from the date of this publication. Copies can also be obtained by calling (530) 634-2665 or by mailing a request to 9 CES/CEAO, 6601 B Street, Beale AFB, CA 95903, Attn: Ms. Rebecca Evans.

Comments

No comments yet.

Add a comment

APPENDIX C

AIR QUALITY EMISSIONS ESTIMATES

Appendix C-1

Air Quality Emissions Estimates for the Proposed Action

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Appendix C-2

Air Quality Emissions Estimates for Alternative 1

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